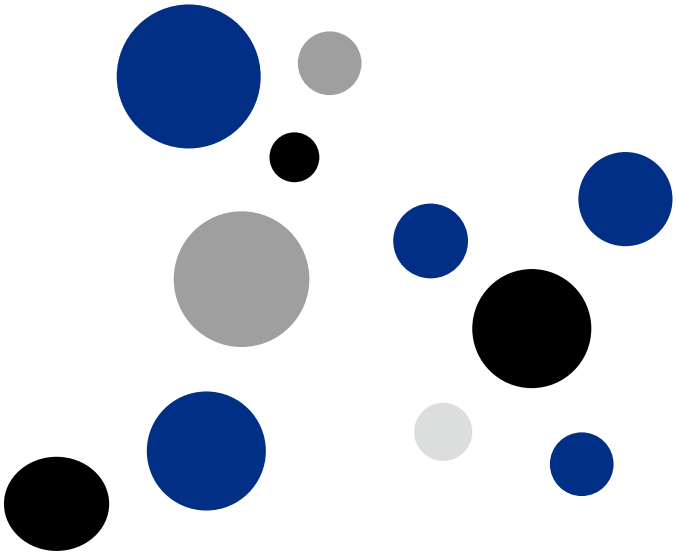
JS500

INKJET PRINTER

USER'S MANUAL

MANUAL NO. JS500-UM-151



GRAPHTEC

To Ensure Safe and Correct Use

- To ensure the safe and correct use of your printer, read this manual thoroughly prior to use.
- After reading this manual, store it in a safe place for reference as necessary.
- Do not allow small children to touch the printer.
- The following describes important points for safe operation. Be sure to observe them strictly.

Conventions Used in This Manual

To ensure the safe and correct use of the printer as well as to prevent human injury and property damage, the safety precautions provided in this manual are ranked in the three categories described below. Be sure to gain a full understanding of the difference between each of the categories before reading the Manual.

⚠DANGER	This category provides information that, if ignored, is highly likely to cause fatal or serious injury to the operator.
⚠WARNING	This category provides information that, if ignored, is likely to cause fatal or serious injury to the operator.
⚠CAUTION	This category provides information that, if ignored, could cause injury to the operator or damage to the printer.

Description of Safety Symbols

The ⚠ symbol indicates information that requires careful attention (including warnings). The specific point requiring attention is described by an illustration or text within or next to the ⚠ symbol.

The ⃠ symbol indicates an action that is prohibited. Such prohibited action is described by an illustration or text within or next to the ⃠ symbol.

The ❗ symbol indicates an action that must be performed. Such imperative action is described by an illustration or text within or next to the ❗ symbol.

Safety Precautions

To ensure the safe and correct use of your printer, be sure to observe the following points.

■ Installation Precautions

⚠WARNING

Do not install the printer in the vicinity of volatile solvents such as alcohol or thinner.

- A volatile solvent coming into contact with any of the internal electrical components may result in a fire hazard or electric shock.

Do not place objects such as those listed below on top of the printer.

- Objects such as these coming into contact with any of the internal electrical components may result in a fire hazard or electric shock.
  - Metallic objects such as necklaces
  - Objects such as glasses, vases, houseplants, etc. that contain water or other fluids.

  If any of these objects does come into contact with the internal electrical components immediately turn off the power, remove the plug from the power outlet, and either contact the store where you purchased your printer or your nearest Graphtec representative.

⚠CAUTION

Do not use the printer in an unstable location such as on a slope or a location that is subject to a lot of vibration.

- Such locations may cause the printer to tip over and cause injuries.

Do not place heavy objects on top of the printer.

- Such objects may tip over or fall off, causing injuries.

If the printer is mounted on its dedicated stand, be sure to use the caster stoppers to fix the stand in place and prevent it from moving while the printer is being used.

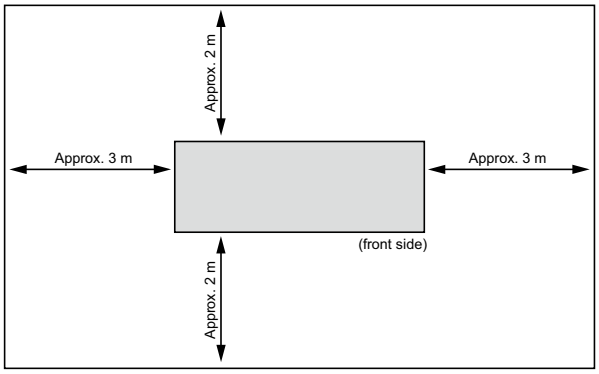
- If the stand is not fixed in place, the printer may tip over and cause injuries.

Avoid using the printer in the following locations.

- Use in such locations may result in a fire hazard or electric shock.
  - Excessively humid or dusty locations
  - Locations exposed to direct sunlight
  - Locations exposed to high temperatures
  - Locations near flames or moisture
- Use at the following places may result in malfunction or failure.
  - Near equipment which generate a strong magnetic force or magnetic field.
- Use this printer in places where the ambient temperature is between 20 to 28°C centigrade and humidity is between 40 to 70% (non-condensing).

Leave plenty of space around the printer.

- Leave sufficient space for operations in front of and behind the printer.



■ Power Supply Precautions

⚠WARNING

Do not damage the power cable, or modify it in any way. Moreover, do not place heavy objects on the power cable, pull on the cable, or bend it excessively.

- There may be current leakage from the damaged parts, resulting in a fire hazard or electric shock.
- Do not unplug or plug in the power cable when your hands are wet, such action may result in electric shock.

Do not connect multiple devices to the same power outlet.

- Use of the printer in such a condition may result in a fire hazard or electric shock.

Do not bundle or tie-wrap the power cable.

- Use of a bundled power cable may result in a fire hazard or electric shock.

Make sure that the power cable is firmly inserted into the power outlet.

- Use of a power cable when the plug is not completely inserted into the power outlet may result in a fire hazard or electric shock.

Do not use a power cable other than the one supplied with your printer.

- Use of a different power cable may result in a fire hazard or electric shock.

Be careful of the following when connecting a ground wire.

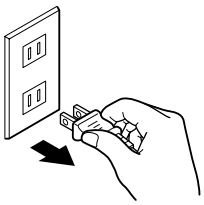
- [Items which allow connection to a ground wire]
  - Ground terminals of electric outlets
  - Ground terminals after completion of grounding work (type D)
- [Items which do not allow connection to a ground wire]
  - Water pipes
    Water pipes may have plastic parts in the middle which do not serve as grounding.
    It is possible to connect a ground wire to water pipes which are approved by the waterworks department to use for grounding.
  - Gas pipes
    They may cause explosions or fires.
  - Ground terminals for telephone lines and lightning conductors
    These may get a high-voltage current from lightning which may cause fires or electric shocks.

⚠CAUTION

The rated voltage for this printer is AC 200 - 240 V. Use an appropriate power source and voltage for the specifications of this printer.

- Using this printer with a power source and voltage which are not compatible with the specifications may result in a fire or an electric shock.
- The operating conditions of this printer are as follows. Use a power source which meets these conditions.
  Power source and voltage: AC 200 - 240 V
  Power supply frequency: 50/60Hz

When disconnecting the power cable, be sure to hold on to the plug, and not pull on the cable itself.



- Pulling on the cable will expose the core wires, or cause damage such as broken wires. Current leakage from the exposed or damaged areas may result in a fire hazard or electric shock.

As a general rule, do not use an extension cord.

- Use of an extension cord may result in a fire hazard or electric shock. If you must use an extension cord, unbundle it, and make sure that the power plug is firmly inserted into the extension cord socket.

Make sure that the power plug can be readily unplugged at any time, and that there are no objects placed in its vicinity.

- Objects placed in the vicinity of the power plug will prevent its removal in an emergency.

Be sure to ground the earth terminal.

Grounding wire required

- Electric leaks which occur when no grounding wire is connected may lead to fires or electric shocks.
- Be sure to have a ground connection.
- Be sure to have a ground connection before connecting a power plug to a power source. Be sure to remove a ground connection after disconnecting a power plug from a power source.

■ Handling Precautions

⚠WARNING

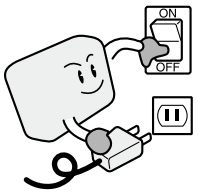
Do not disassemble or modify the printer.

● Such actions may result in a fire hazard or electric shock.

Disassembly prohibited

If the printer makes an unusual noise, generates smoke, overheats, emits a strange odor, or otherwise functions abnormally, immediately turn off the power, remove the plug from the power outlet, and either contact the store where you purchased your printer or your nearest Graphtec representative.

● Use of the printer in such a condition may result in a fire hazard or electric shock.



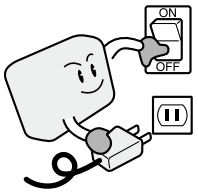
Do not use flammable aerosols or similar products in the vicinity of the printer.

● The gas contained in the spray may cause a fire hazard or electric shock if it comes into contact with the printer's internal electrical components.

Prohibited

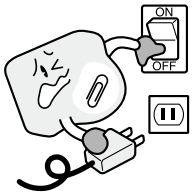
Before moving the printer, make sure that the power switch is in the "off" position and that the power plug has been removed from the power outlet.

● If the printer is moved while it is still plugged into the power outlet, he power cable may be damaged and cause a fire hazard or electric shock.



⚠CAUTION

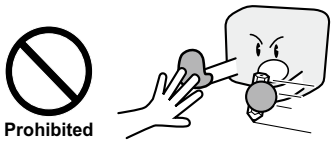
Take care not to drop metallic items such as paper clips or staples, or spill water, other fluids or flammable solvents (alcohol, benzene, thinner, etc.) inside the printer.



- Metallic items or fluids coming into contact with the internal electrical components may result in a fire hazard or electric shock. If such items or fluids fall or are spilled inside the printer, immediately turn off the power, remove the power plug from the power outlet and either contact the store where you purchased the printer or your nearest Graphtec representative.

Do not insert your hands inside the printer during a printing operation or when paper is being loaded.

- Moving parts inside the printer may cause injuries.



Appropriately connect interface cable.

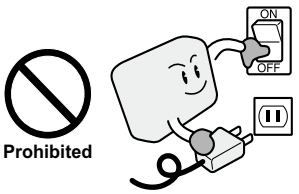
- Connecting cables in the wrong direction may result in failure.

■ Maintenance and Inspection Precautions

⚠WARNING

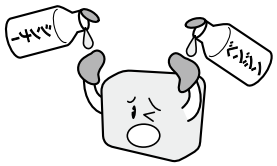
Be sure to turn off the power and remove the power plug from the power outlet before performing any cleaning operations.

- Failure to do so may result in a fire hazard or electric shock. Moreover, there is a risk of injury if the printer starts to move during a cleaning operation.



To clean the printer, use a cloth that has been dampened with neutral detergent and then well wrung out. Do not use volatile solvents such as alcohol, benzene or thinner to clean the printer.

- A volatile solvent coming into contact with any of the internal electrical components may result in a fire hazard or electric shock.



Do not apply any lubricant to mechanical sections of this printer.

- This may deteriorate the performance of this printer which may lead to malfunction or failure.
- Subsequent short circuits or heat generation may result in a fire or an electric shock.

⚠CAUTION

At least once a year, remove the power plug from the power outlet and clean the prongs and surrounding areas.

- A build-up of dust may result in a fire hazard.

When cleaning or checking the inside of the printer, make sure that a metallic object such as a necklace or bracelet does not come into contact with any of the internal components.

- Such actions may result in injuries or an electric shock.

When removing paper that is jammed inside the printer, take care not to get ink from the paper on your clothing or hands.

- Ink may adhere to your clothing or hands.

When replacing roll paper, loading paper, or removing paper that has become jammed in the printer, take care not to cut yourself on the edges of the paper.

- Sharp paper edges may cause injuries.

■ Precautions on Handling the Consumable Items

⚠CAUTION

Do not touch any metallic parts on the print heads after a printing operation.

- ●These parts will be hot, and may cause burns.
- ●Printing malfunctions may occur.
- ●There is a risk of damage from static electricity.

Do not touch the ink cartridge openings or the head section of the print heads.

- ●Your fingers may become stained with ink.
- ●Printing malfunctions may occur.

As a safety precaution, store the print heads and ink cartridges in a location out of the reach of small children.

- ●If ink is licked or ingested accidentally, consult a doctor immediately.

Do not drop or shake the print heads or ink cartridges.

- ●Such actions may cause the ink to leak or spatter, with the risk of staining your surroundings and clothing.
- ●The head section may become damaged, making the print head unusable.

The print heads are consumable items

- ●The print heads are consumable items. If printing is not performed correctly even after the print heads have been cleaned or adjusted, replace them with new ones. See "Chapter 9 Maintenance" for further details.

■ For those with a cardiac pacemaker

This printer generates a faint magnetic power. Anyone with a cardiac pacemaker who feels any abnormality should move away from this printer.

And consult a doctor immediately.

■ Precautions to observe when removing jammed paper

When removing paper that has become jammed inside the printer, take care not to get ink from the paper on your clothing or hands. There is a possibility of ink adhering to your clothing or hands.

■ Precautions to Note When Unpacking the Printer

If the printer was stored in a location where the temperature dropped below 10°C, allow sufficient time for the printer to become acclimatized to room temperature (the operating environment specification is the range from 20°C to 28°C) before mounting the print heads. (We recommend that you allow at least two hours for the printer to become acclimatized.)

■ Precautions to observe when handling the paper

- Paper may not be fed correctly and may become jammed if the leading edge of the roll paper is not straight or if there is adhesive from the fastening tape remaining on the paper. Make sure that the leading edge is straight before loading the paper in the printer.
- Depending on the storage conditions, the paper may become creased and/or the leading edge may curl up. The use of creased or curled paper may cause paper jams. Remove the creased or curled sections before loading the roll paper in the printer.
  (If you are using a cut sheet, remove the creased section before loading the sheet in the printer.)

■ Notes on the print heads

Do not perform any unnecessary print head removal or mounting operations.

■ Precautions on handling ink cartridges and consumable items

⚠WARNING

Never put ink cartridges close to a fire.

- Ink cartridges are flammable and may be a fire hazard.

Take care not to ingest ink or get it into your eyes.

- This may cause breathing difficulty or damage to your eyes. If ink gets into your eyes, immediately rinse with clear water, and consult a doctor.
- If you ingest ink accidentally, do not try induce vomiting; immediately consult a doctor.

Store ink cartridges in a location out of reach of small children.

If ink adheres to this printer, immediately wipe it off.

- Leaving the ink as is may cause damage to the surface coating of this printer.

⚠CAUTION

Take care regarding the following issues.

- Do not use any ink other than those specified because it may not only disturb printing quality, but also cause a malfunction which will prevent appropriate maintenance procedures.
- Do not use ink after the expiration date because it may cause a malfunction.
- Put ink cartridges after use in a plastic bag, and dispose of them as industrial waste. If there are any local regulations on a disposal method, comply with the applicable rules.
- Take care not to get ink on your skin or clothing. If ink gets on your skin, immediately rinse it off by using soap and water.
- Periodically check the amount of the waste ink in waste ink bottles to avoid an overflow.
- When removing waste ink bottles, place paper on the floor to avoid stains from leaked ink.
- Store ink in a dark cold place. Never store it at locations exposed to high temperatures or direct sunlight. This may affect its performance.
- Do not disassemble ink cartridges.
- Paper for commercially available solvent ink is appropriate for this printer.

PREFACE

Thank you for choosing the Graphtec JS500 inkjet printer.
Please read this manual thoroughly before attempting to use your new product to ensure that you use it safely and correctly.

Notes on this Manual

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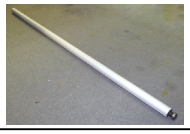
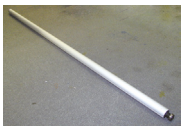
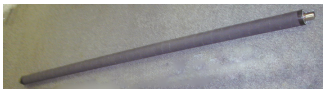
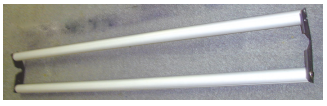
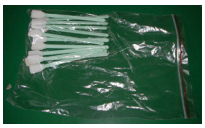
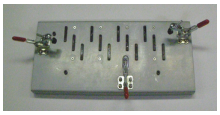
Check to confirm that all of the items shown below are present. If any item is missing, promptly contact the store where you purchased your printer or your nearest Graphtecrepresentative.

No.	Name	Q'ty
1	Stand Stand R/L, Center bar	1 Set
2	Dryer unit 	1 Set
3	Printhead JS500-18:8, JS501-18:12	8/12
4	Printhead clamp JS500-18:8, JS501-18:12	8/12
5	Media Take-up Roller 	1
6	Media Feeding Roller 	1
7	Rubber Roller  Installed on the Printer	1
8	Media Tension Bar unit  Installed on the Printer	1 Set
9	Waste Ink Tank 	2

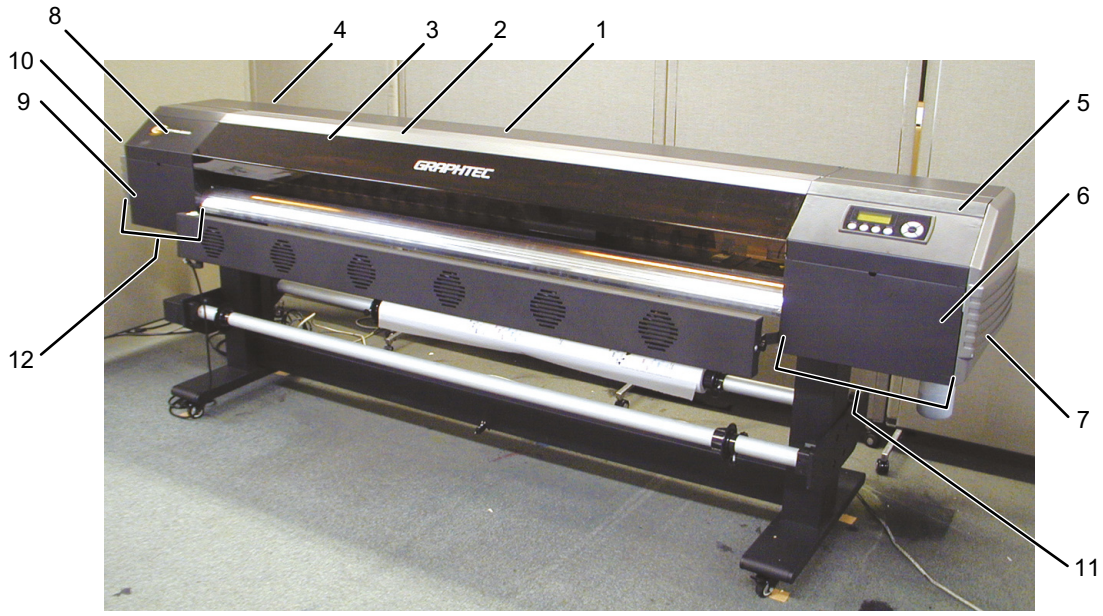
No.	Name	Q'ty
10	flange 	4
11	Plastic syringe 	2
12	ø3/5 Soft tube 	1
13	Outlet tube assembly JS500-18:8, JS501-18:12	8/12
14	USB interface cable 	1
15	Power cable (Printer, Heater) 	2
16	Power cable (Dryer) 	1
17	Bursh 	1 Set
18	Non-woven fabric 	1 Set

No.	Name	Q'ty
19	One-off glove 	1 Set
20	Software CD-ROM	1
21	User Guide CD-ROM	1
22	User's Manual	1
23	Setup Guide	1
24	Screw (Screw for Printhead fixation) JS500-18:16, JS501-18:24	16/24
25	Positining Pin JS500-18:18, JS501-18:26	18/26
26	Plastic block (For Printhead fixation) JS500-18:16, JS501-18:24	16/24
27	Spoid (5 cc) 	3
28	Solution bottle (250 ml) 	1

No.	Name	Q'ty
29	Hex-head wrench (5 mm/4 mm) 	1
30	Jig, Printhead height adjustment 	2
31	Cleaning roller Installed on the Printer	1
32	Jig, Ink installing 	1

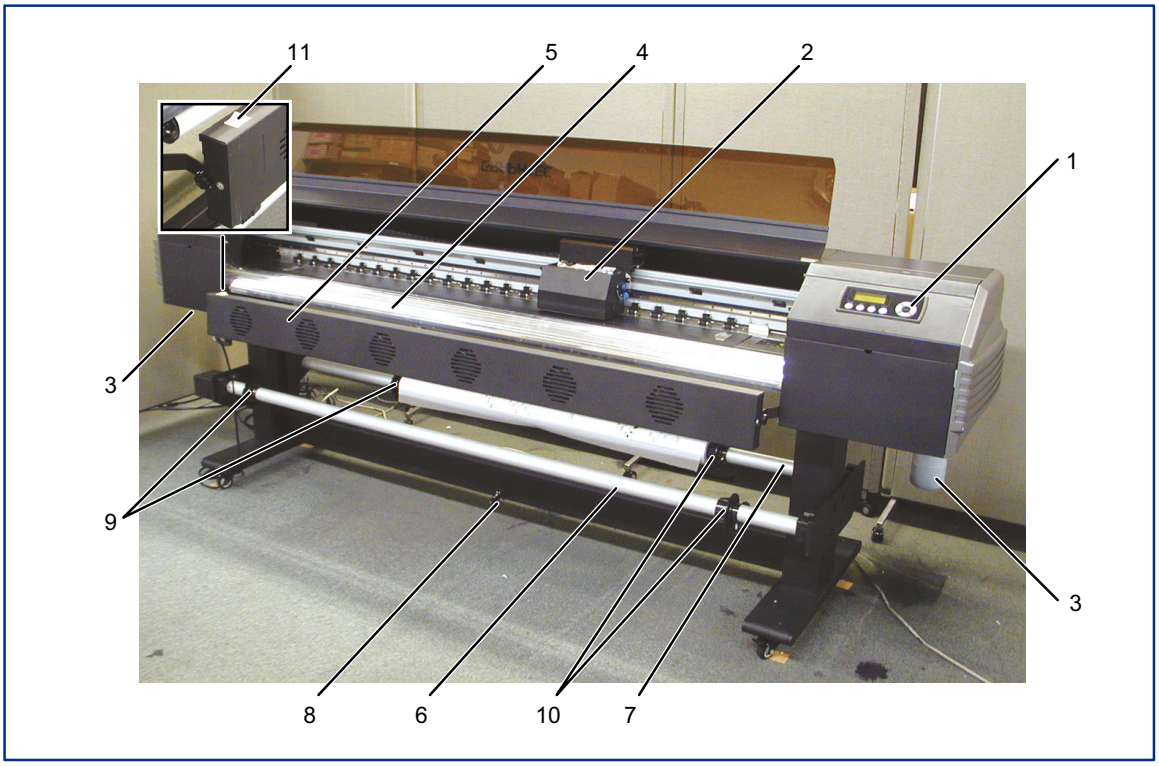
1.2 Parts Names and Functions

Front View



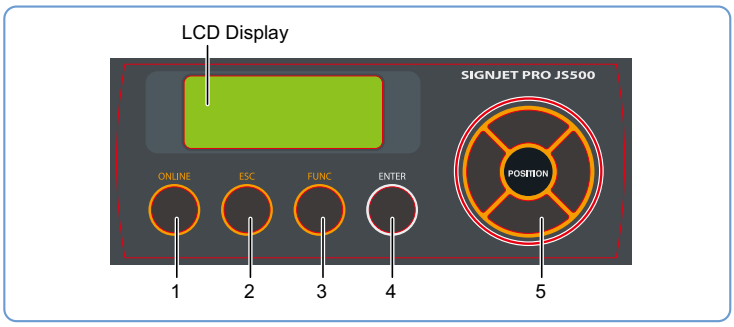
No.	Name	Functions
1	Top cover	The upper front cover.
2	Front cover	The front cover.
3	Front cover clear	The front clear cover.
4	Rear cover	The upper rear cover.
5	Right upper cover	The upper right cover.
6	Right bottom cover	The cover at the cleaning position.
7	Side cover (Right)	The right side cover.
8	Left upper cover	The upper left cover.
9	Left bottom cover	The cover for the maintenance station.
10	Side cover (Left)	The side cover.
11	Main cleaning position	The Home Position of printheads. Capping and Auto Cleaning of the printheads are performed at this position.
12	Print Head Maintenance position	At the initial setup: Installation of the printheads and initial pouring of ink are performed at this position. During normal use: Recovery procedures for nozzles of the printheads are performed in case that maintenance is required due to faded print.

Main Parts



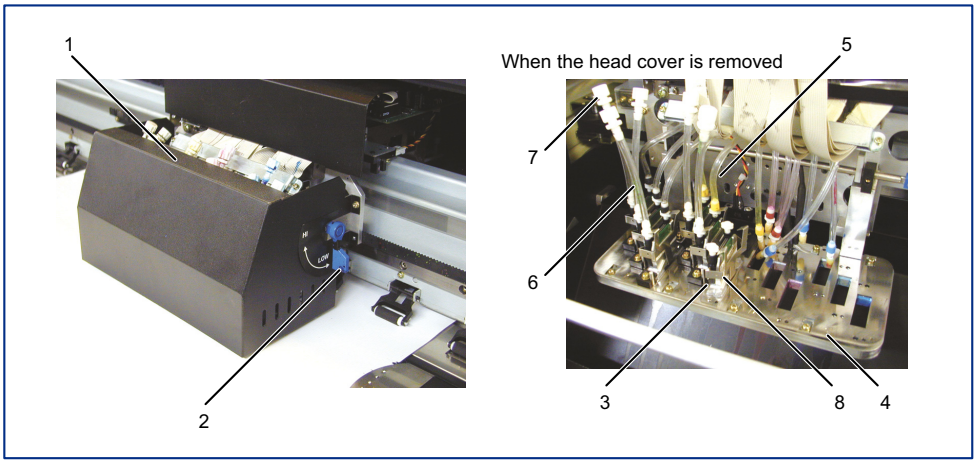
No.	Name	Functions
1	LCD Control Panel	Confirmation of the printer status and various settings can be performed with this panel.
2	Print Carriage	This part moves the printheads.
3	Waste Ink Tank	These tanks store waste ink which is discharged during the initial pouring of ink or recovery procedures of the printheads. One is installed at the main cleaning position, and the other one is installed at the PH Maintenance position.
4	Heating board	This board warms up media to an appropriate temperature for better printing quality.
5	Dryer unit	This unit is used to accelerate drying of ink after printing.
6	Media Take-up Roller	This roller takes up the media after printing. It is used for printing on a long piece of paper.
7	Media Feeding Roller	This roller is used to set media (roll paper).
8	Media Take-up Sensor	This sensor detects the media after printing. After the printed media reaches a certain length, the Media Take-up Roller starts taking up the media.
9	Left flange	This part fixes the media (roll paper) onto the roller.
10	Right flange	This part fixes the media (roll paper) onto the roller.
11	Dryer unit Switch	This switch turns the Dryer unit on or off.

LCD Control Panel



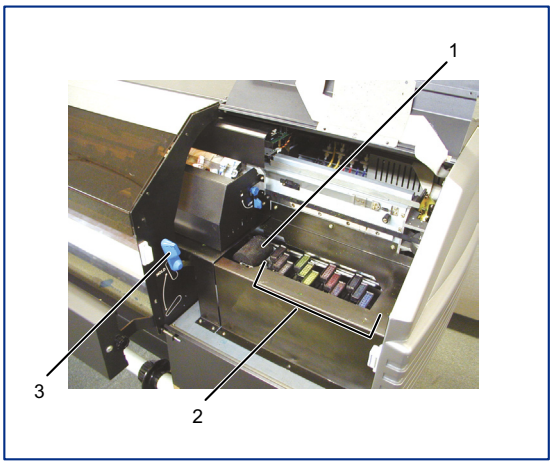
No.	Name	Functions
1	ONLINE Key	This key switches online/offline. Press this key for several seconds to pause printing.
2	ESC Key	This key cancels the current job, and returns the menu display to one position above.
3	FUNC Key	FUNC button - This button switches functions of this printer. Press the [FUNC] key + [◄] key simultaneously to execute test print when no printing is performed.
4	ENTER Key	This key confirms the selection of an item or the setting of a value.
5	POSITION Key (↑ ↓ ←→)	<Operations on the Control Panel> ▲▼ These keys scroll the menu. They are also used to increase or decrease the set value of the selected item. ◄ ► These keys move the cursor on the menu.

Print Carriage



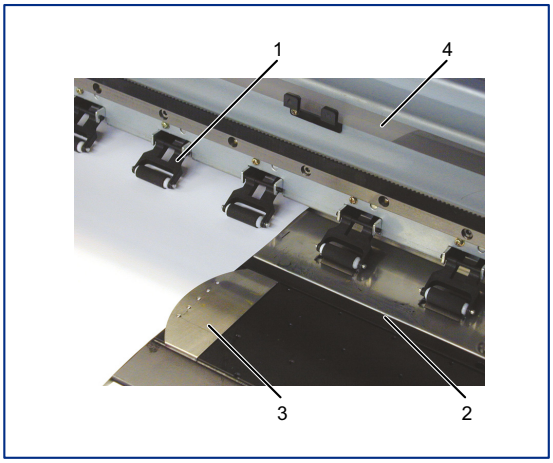
No.	Name	Functions
1	Head cover	The cover to protect the Print Carriage.
2	P.H. Adjustment lever	The lever to adjust the height of the printheads. If the printheads scratch the media, adjust their height by using this lever.
3	Printhead	Printheads.
4	Printhead-carriage	This part moves the printheads.
5	Inlet tube	These tubes supply ink to the printheads.
6	Outlet tube	These tubes are used for introducing ink to the printheads or for maintenance.
7	Outlet tube cap	These caps are for outlet tubes.
8	Printhead clamp	These parts are used to fix the printheads and the tubes.

Maintenance station



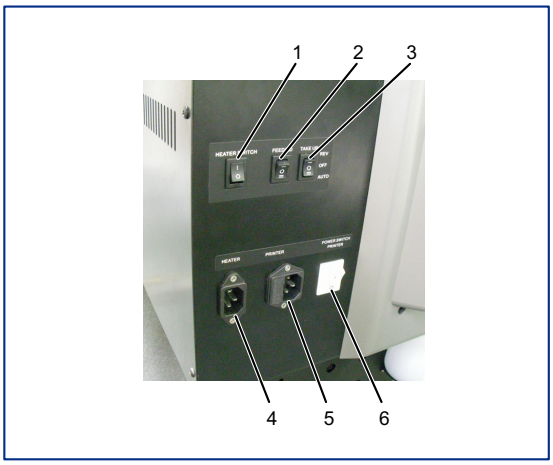
No.	Name	Functions
1	Cleaning roller	This roller cleans the printheads. The cleaning roller is a replaceable item. Please replace it with a new one if it becomes dirty.
2	Capping unit	These parts are used for capping the printheads.
3	Media Set Lever	This lever is used to set or remove media.

Front cover



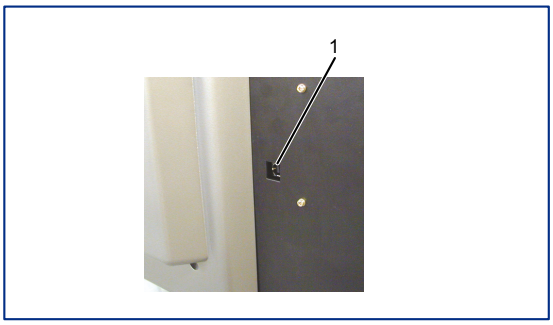
No.	Name	Functions
1	Pinch roller	These parts are important parts to forward paper. They retain the paper in place.
2	Printing Platform	The printheads pass on this part during printing.
3	Media guide	This part prevents the paper edges from floating.
4	(Y-encoder)	This part is an important part to move the Printhead Carriage.

Side of the printer body (left)



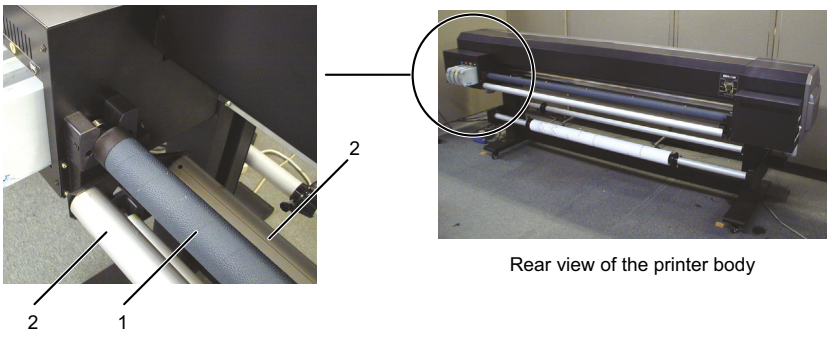
No.	Name	Functions
1	Heater Switch	The switch for the Heater (Pre Heater, Front Heater, Plat form Heater).
2	Media feeding System switch	The switch for the media feeding system.
3	Media take-up System switch	The switch for the media take-up system.
4	Heater soket	The dedicated power supply switch for the Heater.
5	Power soket	The power socket on the printer body.
6	Power Switch	The power switch of the printer body.

Side of the printer body (right)



No.	Name	Functions
1	USB interface connector	The connector for a USB interface cable.

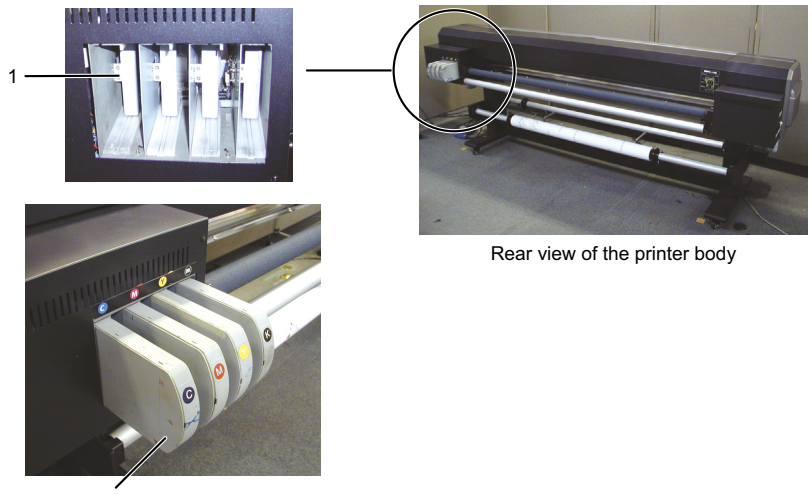
Rear of the printer body



Rear view of the printer body

No.	Name	Functions
1	Rubber Roller	This part is an important part to stretch the media for better printing quality.
2	Media Tension Bar	This part is an important part to stretch the media for better printing quality.

Rear of the printer body (right)



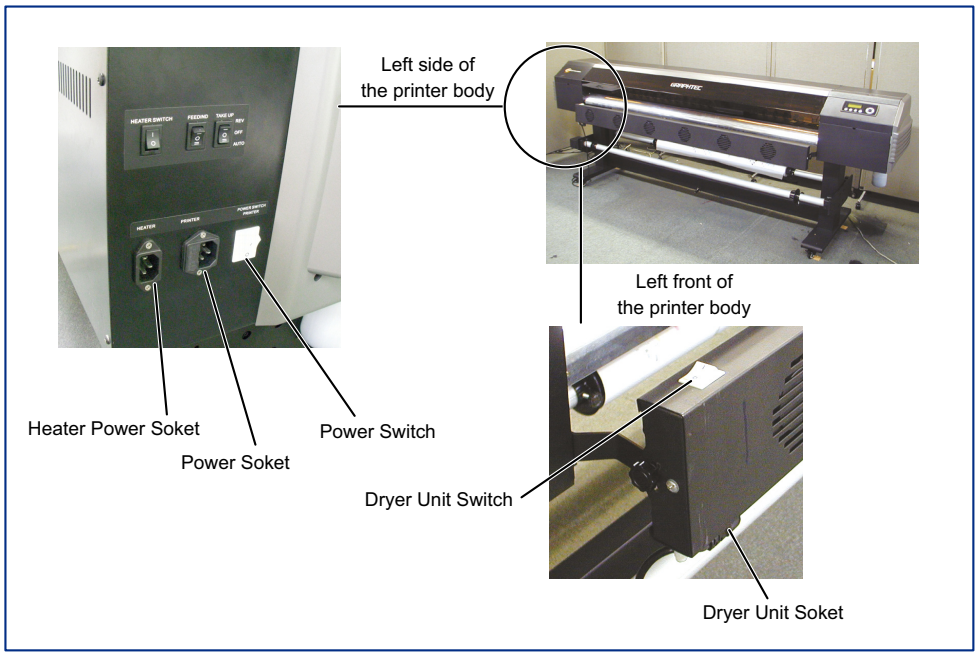
Rear view of the printer body

No.	Name	Functions
1	Ink holder C, M, Y, BK	This is where ink cartridges are installed. Check the C, M, Y and BK labels on the ink cartridges, and appropriately install them in the holders specified for each.
2	Ink cartridge C, M, Y, BK	Four ink cartridges, which are Cyan, Magenta, Yellow and Black.

Chapter 2 Connection and Preparations

2.1 Connecting to the Power Supply

1. Make sure that all the power switches (for the printer, heater and dryer) are at the off position (indicated by the "O" mark).
2. Connect one end of the attached power cables to the power sockets (for the printer, heater and dryer) on the printer body and the other end to an AC power outlet of the rated supply voltage.

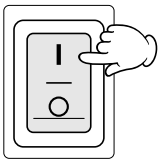


2.2 Turning the Power On and Off

Turning the printer On

Press the "ON" side (indicated by the "|" mark) of the power switch of the printer on the left side of the printer body. The printer is turned on and initial operations start.

Power Switch



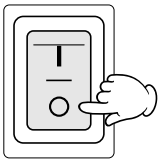
Press here (ON)

Turning the printer Off

CAUTION ●**To maintain the appropriate condition of the printheads, this printer automatically performs cleaning operations when it is in the standby mode. It is recommended to leave the power on.**

To turn the printer off, press the "OFF" side (indicated by the "O" mark) of the power switch of the printer on the left side of the printer body.

Power Switch



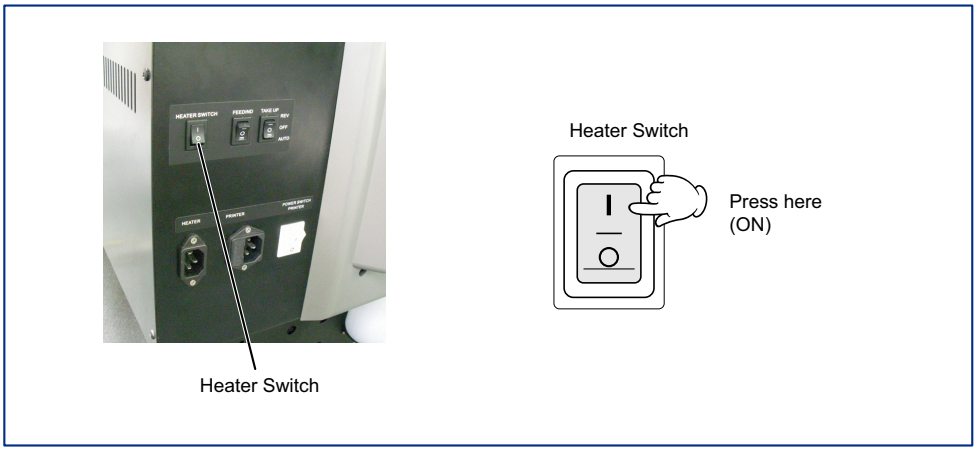
Press here (OFF)

Turning the heater On

⚠ CAUTION ●When the power of the printer is off, the heater cannot be turned on by turning on the Heater Switch.

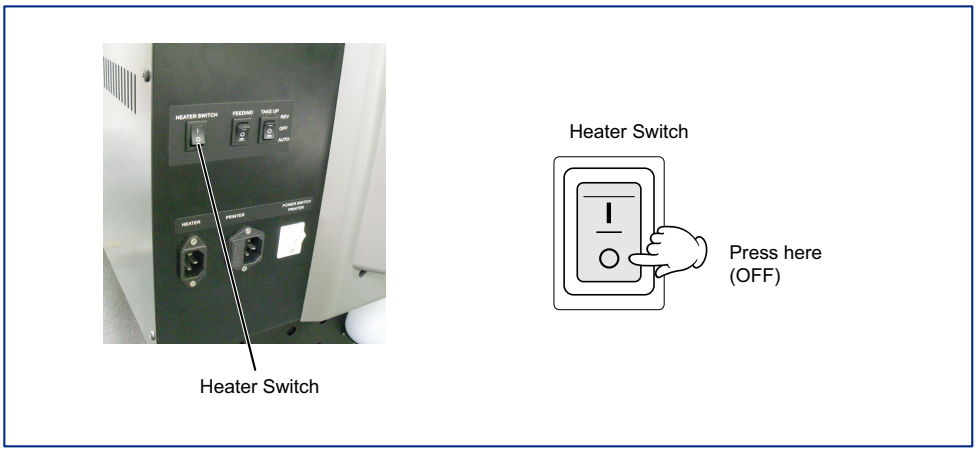
●Be sure to set the temperature of the heater on the Control Panel before turning on the heater. See "Chapter 7 Setting the heater" for setting the temperature of the heater.

Press the ON side of the Heater Switch. The printer is turned on and the temperature increases to the set value.



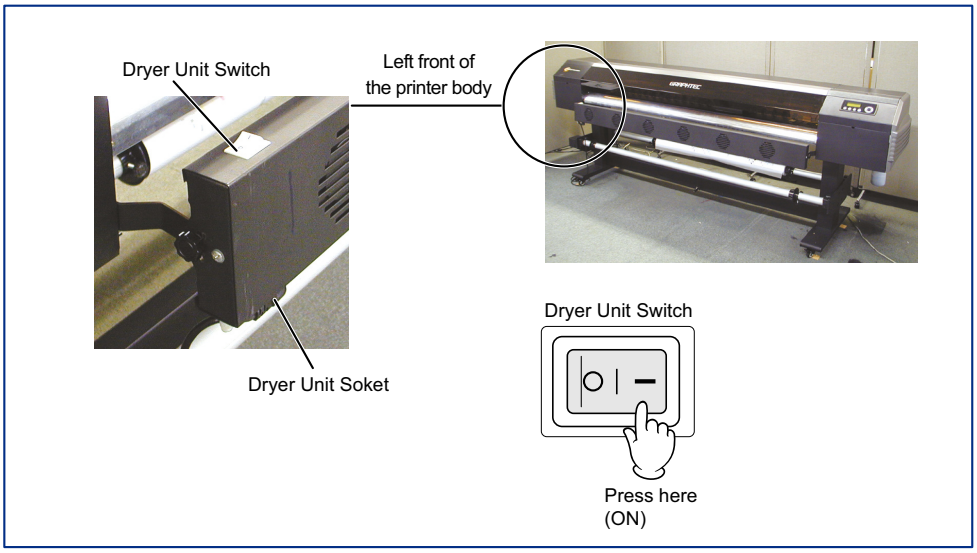
Turning the heater Off

Press the OFF side of the Heater Protective Switch.



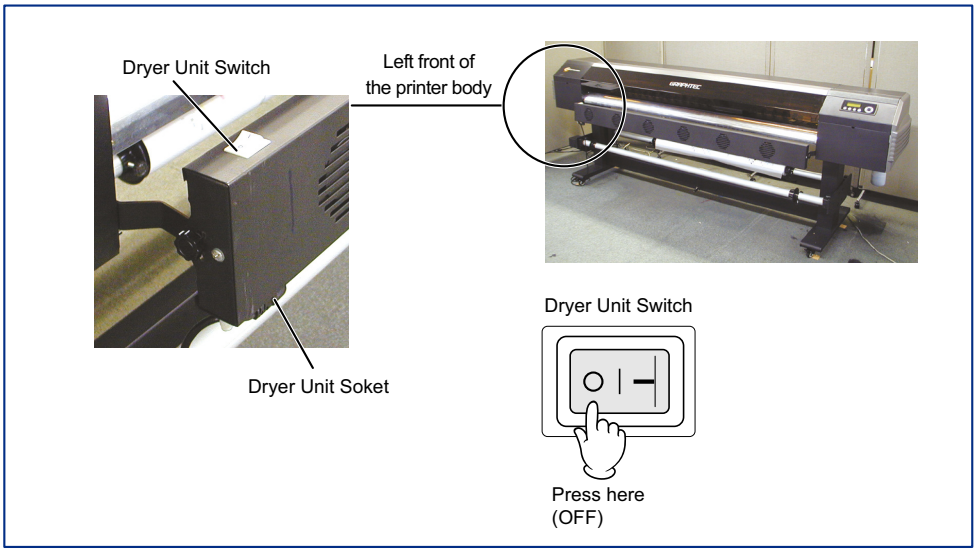
Turning the dryer unit On

Press the "ON" side (indicated by the "|" mark) of the Dryer Unit Switch. The dryer starts rotating.



Turning the dryer unit Off

Press the "OFF" side (indicated by the "O" mark) of the Dryer Unit Switch. The dryer stops rotating.

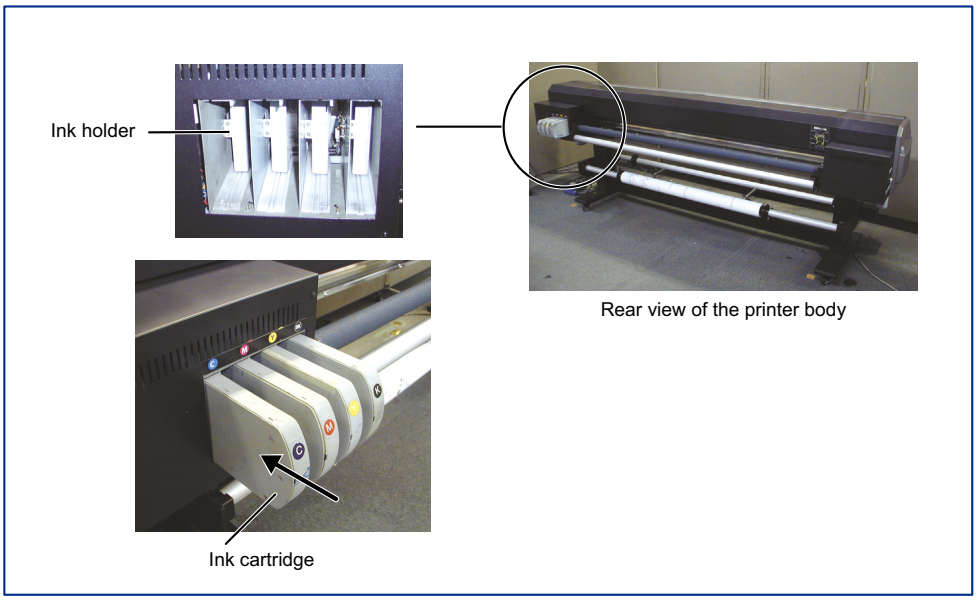


2.3 Mounting the Ink Cartridges

⚠ CAUTION

- **Do not drop or shake the ink cartridges. Such actions may cause the ink to leak or splatter which may lead to staining of the immediate surroundings or on clothing.**
- **Do not insert and remove ink cartridges to and from the printer body too frequently. Inserting and removing cartridges five or more times may result in leakage of the ink from the insertion port.**
- **After removing ink cartridges, do not point the insertion port downward. Ink may leak from the insertion port.**

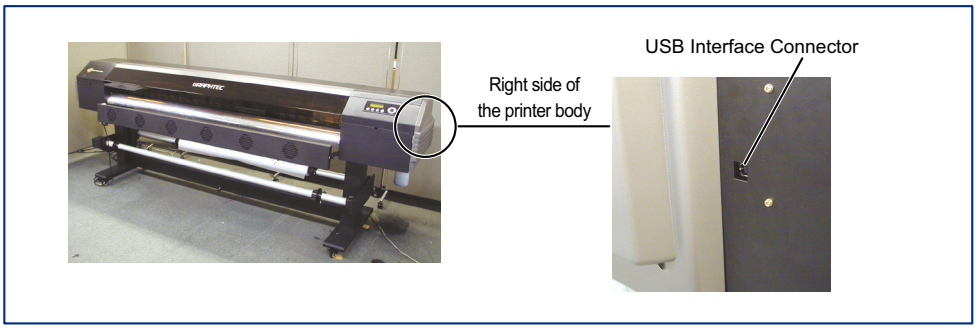
Set the ink cartridges in the ink holders on the right side of the rear of the printer body. Insert them slowly along the insertion port of the ink holders.

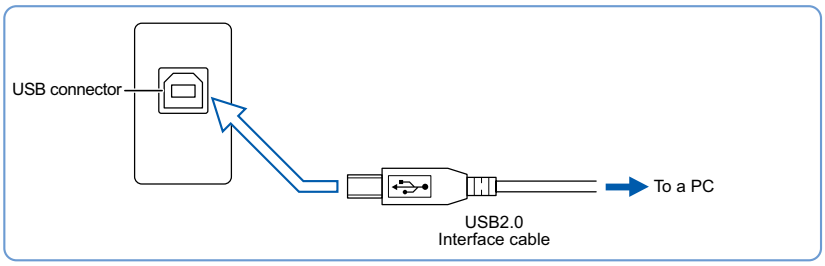


2.4 Connecting the Printer to a Computer

Connecting the USB interface cable

Connect the printer body and a PC with a USB interface cable via a USB interface connector. The USB interface cable has connectors with different shapes for a PC and for the printer. Be sure to check the shape of each connector and appropriately connect the cable.

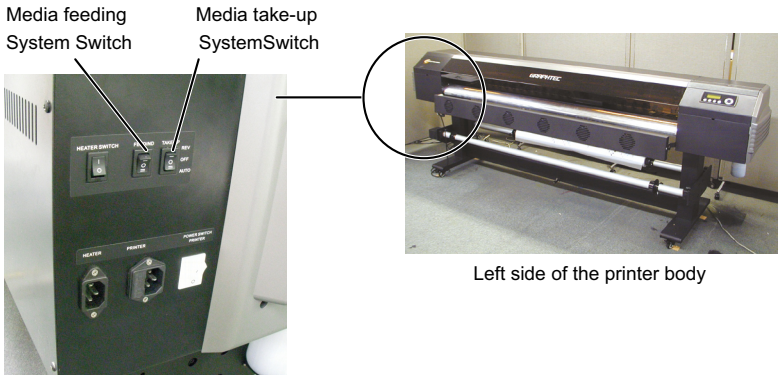




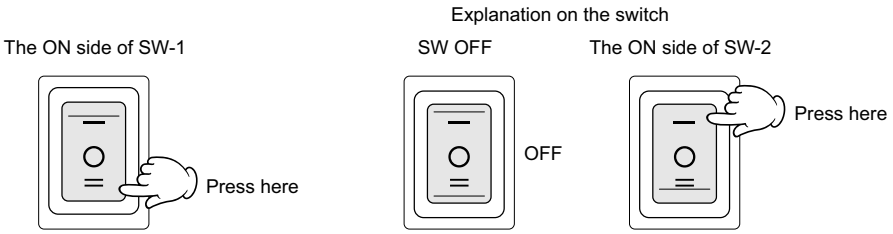
CAUTION ●**Insert the USB interface cable securely into the USB interface connector.**

Chapter 3 Loading the Paper

⚠ CAUTION ● The Media Feeding System Switch and the Media Take-up System Switch have a three-stage structure. See "3.1 Feeding the paper", and "3.2 Taking up the paper" for the functions of these switches.

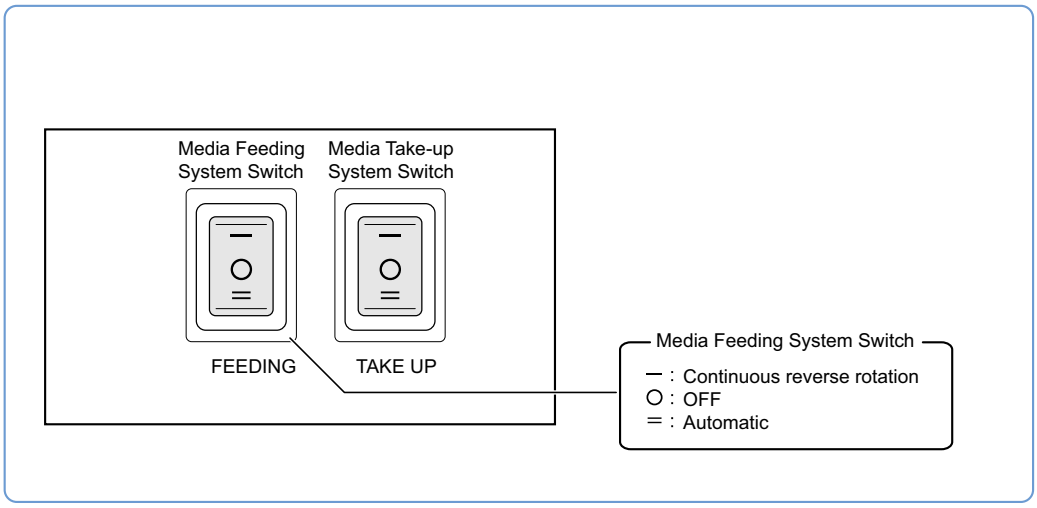


Left side of the printer body



3.1 Feeding the paper

CAUTION ● **Usually, set the switch to the "=" side.**



For printing (for normal use)

Set the Media Feeding System Switch to the "=" side. The sensor checks for the presence of paper, and the detected paper is automatically fed out.

CAUTION ● **Be sure to set the switch to the "=" side (automatic feeding) when printing. If printing occurs while the Media Feeding System Switch is set to the "O" side or the "—" side, it may result in a failure.**

Rolling up the paper

Set the Media Feeding System Switch to the "—" side. While the switch is set to the "—" side, the Media Feeding Roller rotates in a reverse direction which rolls up the paper on the roll paper stocker.

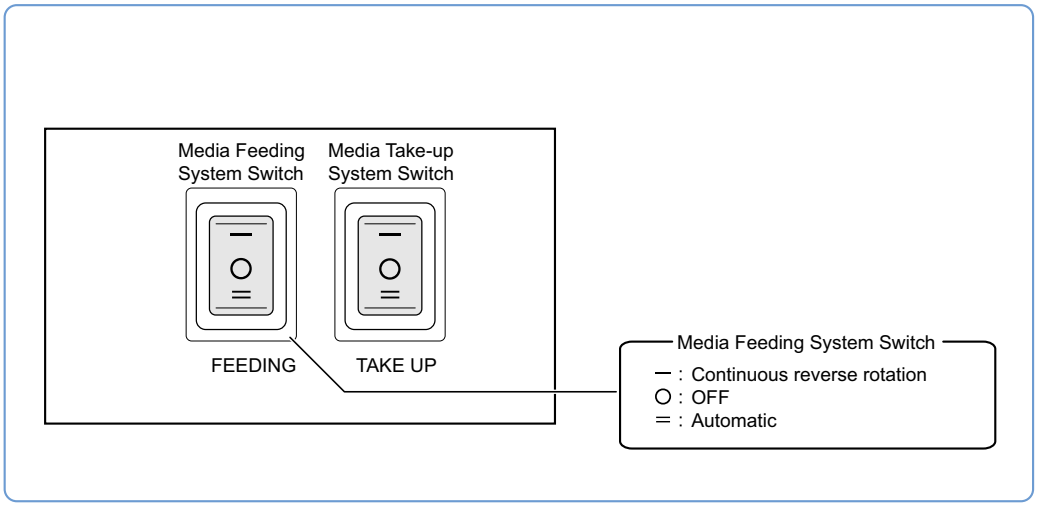
Stopping the feeding of the paper

Setting the Media Feeding System Switch to the "O" side stops the feeding.

CAUTION ● **Usually, set the switch to the "=" side.**

3.2 Taking up the paper

This printer allows automatic taking up of the media after printing.



Automatic taking up the paper

Set the Media Take-up System Switch to the "=" side. The sensor checks for the feeding of paper, and the paper is automatically taken up.

Removal of the paper from the Media Take-up Roller

Set the Media Take-up System Switch to the "—" side. While the switch is set to the "—" side, the Media Take-up Roller rotates in a reverse direction which allows the paper to move backward (remove from the roller).

Stopping the taking up of the paper

Set the Media Take-up System Switch to the "O" side.

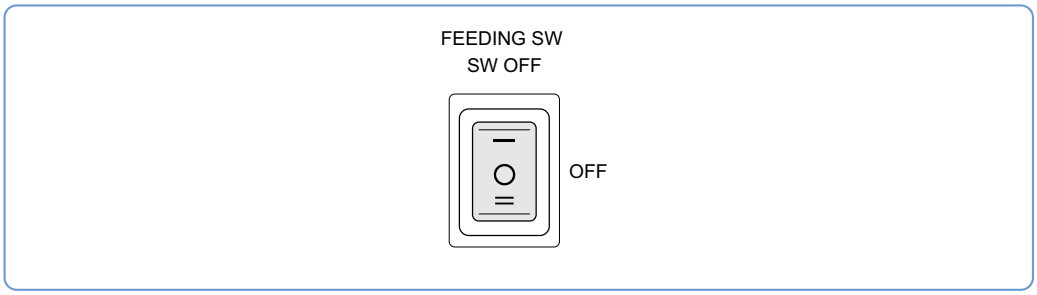
3.3 Setting a roll paper

Setting a roll paper

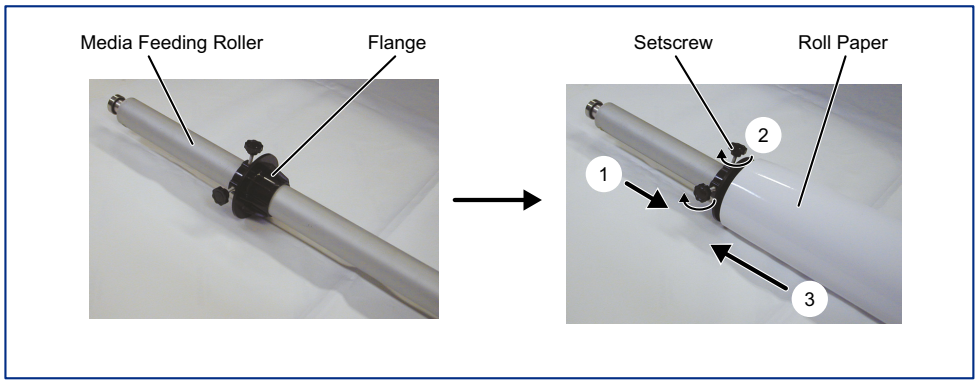
CAUTION

- **When setting a roll paper in the printer, try to avoid touching the printing surface directly with your hands. Fingerprints on the printing surface will adversely affect ink adhesion.**
- **Take care not to cut your fingers on the edges of the paper when handling it.**

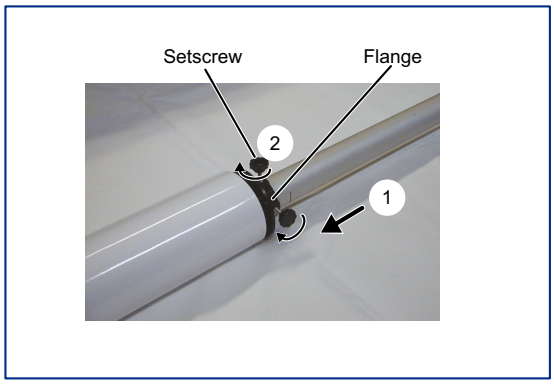
1. When the power of the printer is on, set the Media Feeding System Switch to the off ("O") side.



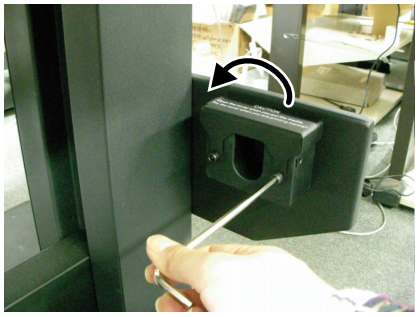
2. Set the position of the flange, tighten the setscrews and set a roll paper on the flange.



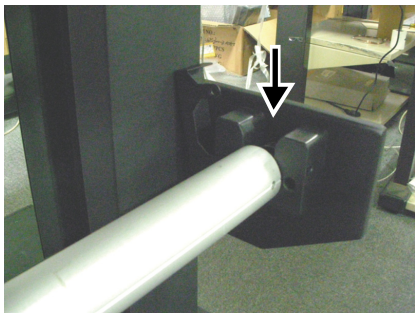
3. Move another flange on the opposite side to the position which allows the setting of the roll paper, and tighten the setscrew.



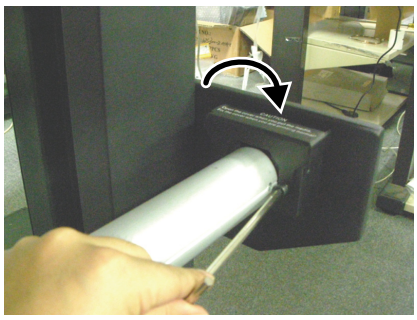
4. Remove the screws on the stocker holder on both sides of the rear body, and remove the cover.



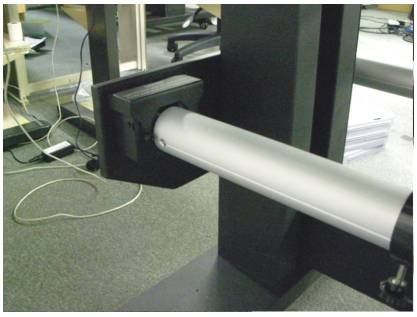
5. Check the direction in which the paper is wound, and install the Media Feeding Roller with the roll paper on the stocker holder.



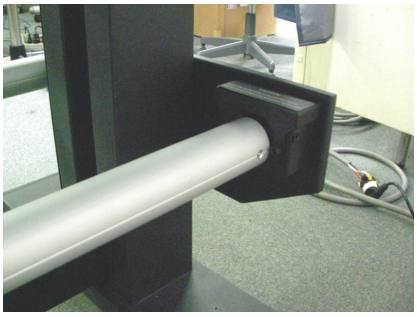
6. Fix the cover of the stocker holder with mounting screws.



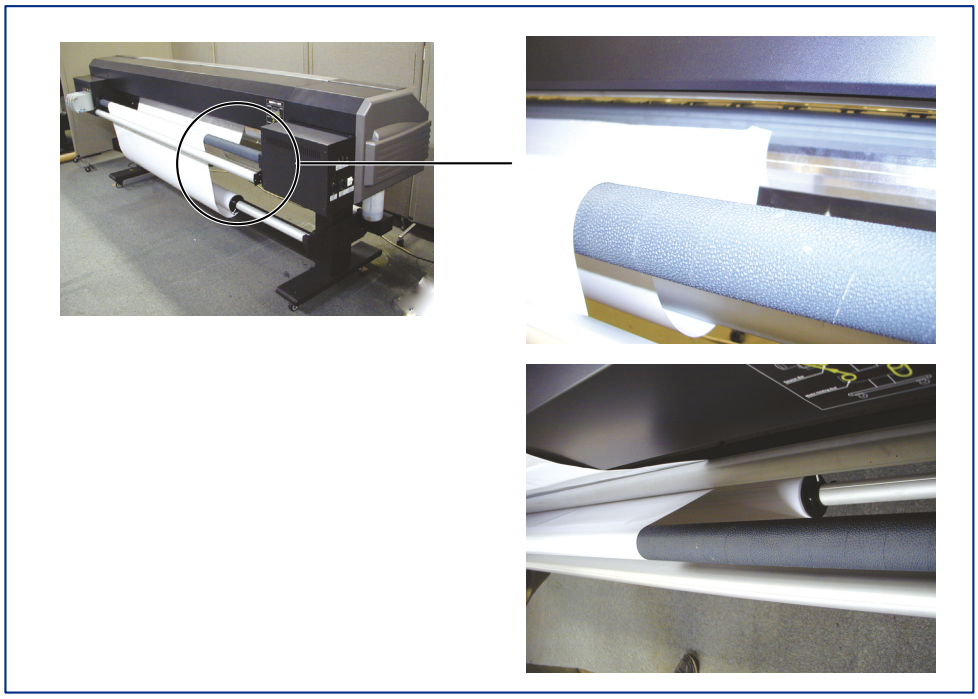
Left side of the rear of the printer body



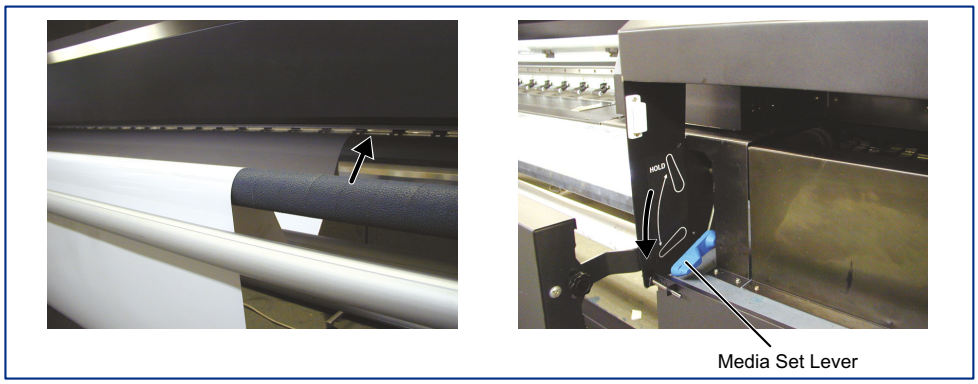
Right side of the rear of the printer body



7. Pull out the paper from the roll, making sure that the left and right sides are pulled out evenly. Then, set the paper around the Rubber Roller and the Media Tension Bar. Set the paper correctly around the Rubber Roller and the Media Tension Bar as shown in the photos.

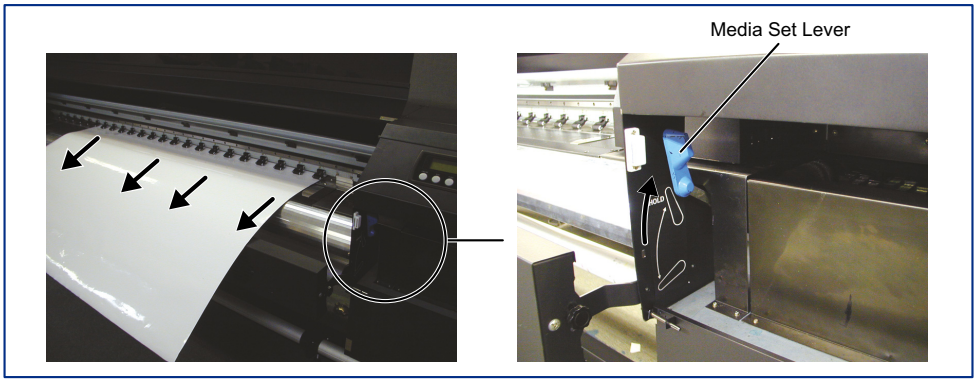


8. Insert the paper from the rear of the printer body. Be sure to check that the Media Set Lever is lowered (and the Pinch roller is raised).

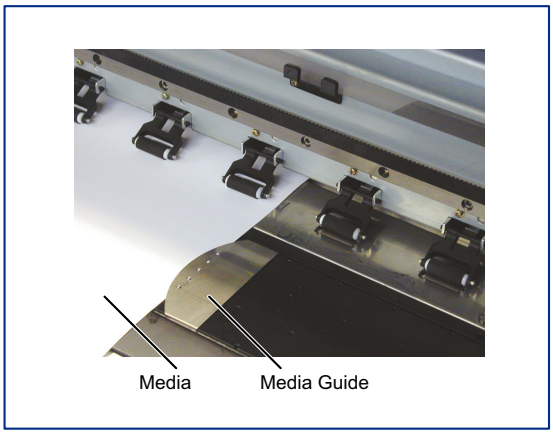


9. Pull the paper out from the front side of the printer body.

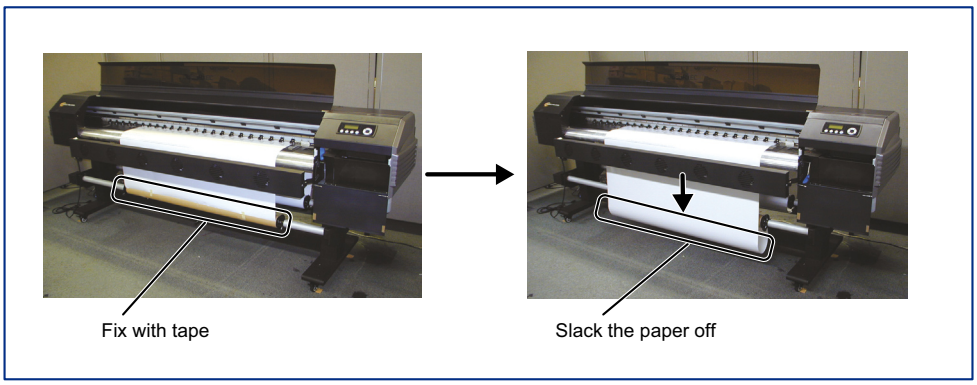
10. Take up the slack of the paper, and set the Media Set Lever to the LOAD position.



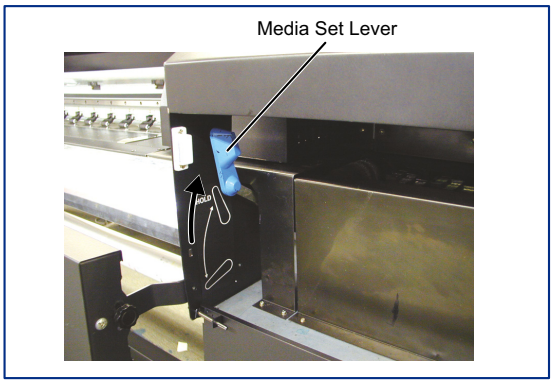
11. Set the Media Guide.

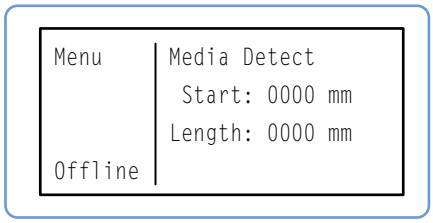


To use the Media Take-up unit, pull a sufficient length of paper out, and fix it on a paper core by using tape. (See "3.4 Setting a roll paper for taking-up printing" described later).



12. When the paper width detection (Media Detect) is set to "on", raising the Media Set Lever leads to the following display on the LCD and switches to the paper width detection mode.





Press the [ENTER] key to perform the paper width detection and to store the position where the paper is currently set and the paper width on the printer.

Press the [ESC] key to cancel the paper width detection. In this case, the value which was acquired by the immediately previous paper width detection has been stored on the printer.

When the power of the printer is off, turning on the power while the paper width detection (Media Detect) is set to "ON", and the set lever is raised (the push roller is lowered), the printer turns to the paper width detection mode. (See "3.5 Detecting the paper width and the position where the paper is set" described later for how to set the paper width detection).

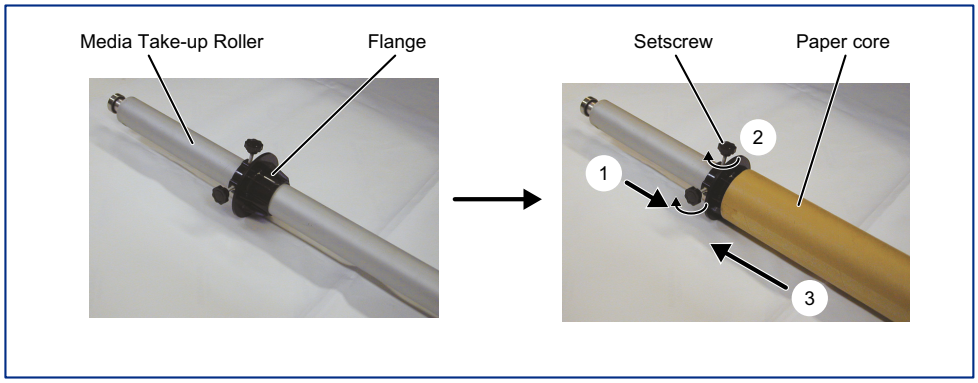
3.4 Setting the roll paper for taking-up printing

How to set the roll paper when the Media Take-up unit is used

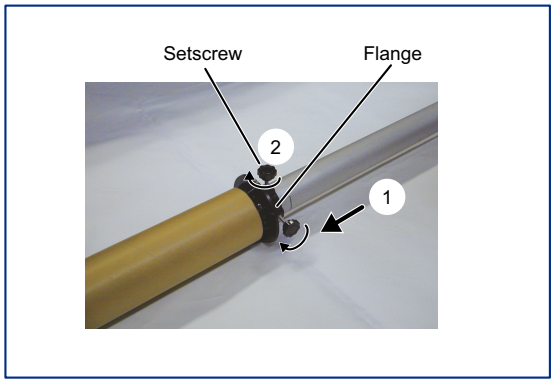
To use the Media Take-up unit, pull out the paper so that the tip of the roll paper reaches the paper core on the Media Take-up unit.

How to set a paper core

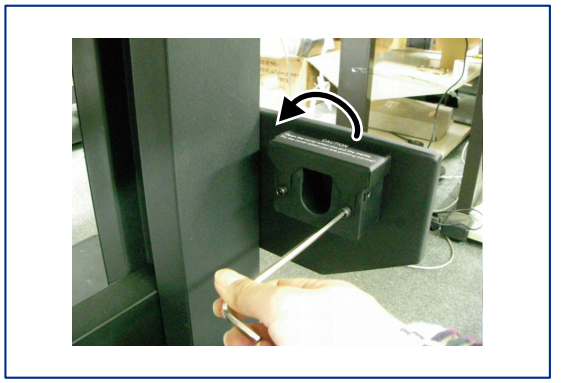
1. Set the position of the right flange, tighten the setscrews and set a paper core on the flange.



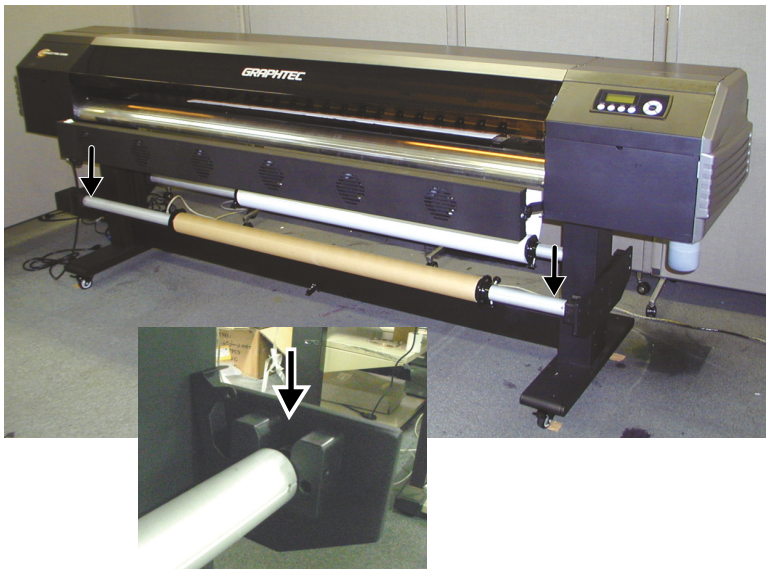
2. Move the left flange to the position which allows setting of the roll paper, and tighten the setscrew.



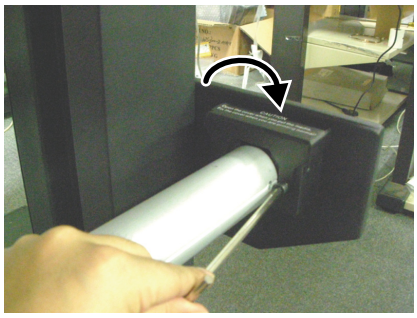
3. Remove the screws on the stocker holder on both sides of the front body, and remove the cover.



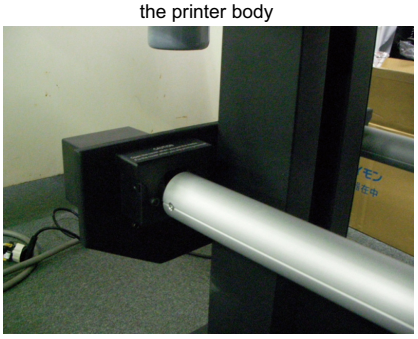
4. Check the direction of the Media Take-up, and set it on the stocker holder.



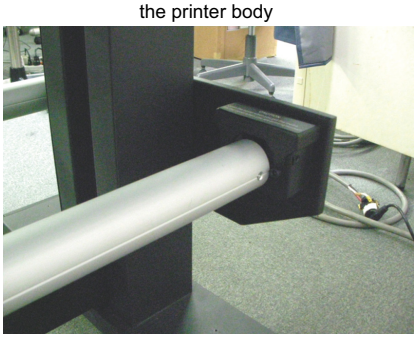
5. Fix the cover of the stocker holder with mounting screws.



Left side of the front of the printer body



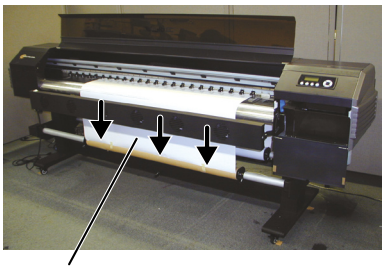
Right side of the front of the printer body



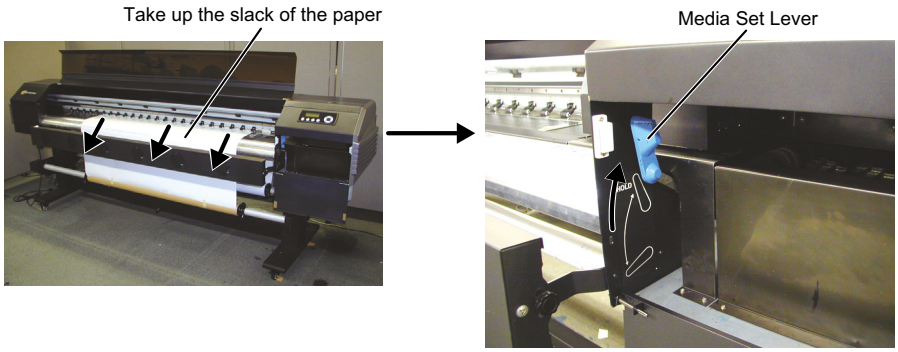
How to set the roll paper on a paper core

When you use the Media Take-up unit, fix the paper securely on a paper core by using tape.

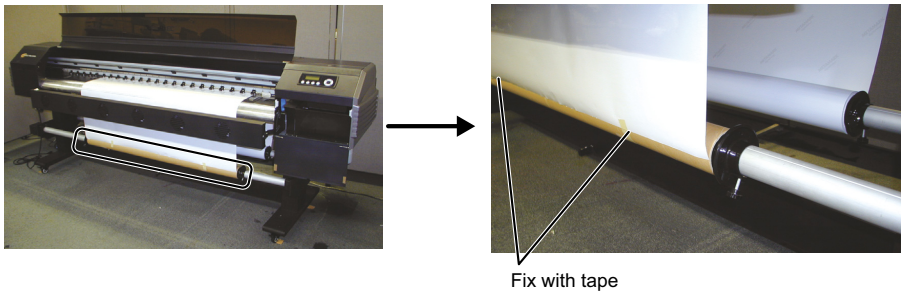
1. Referring to the above-mentioned method to set the roll paper, pull the paper out until it reaches the paper core on the Media Take-up unit.



2. Take up the slack of the paper, and raise the Media Set Lever.



3. Fix the paper on the paper core by using tape.

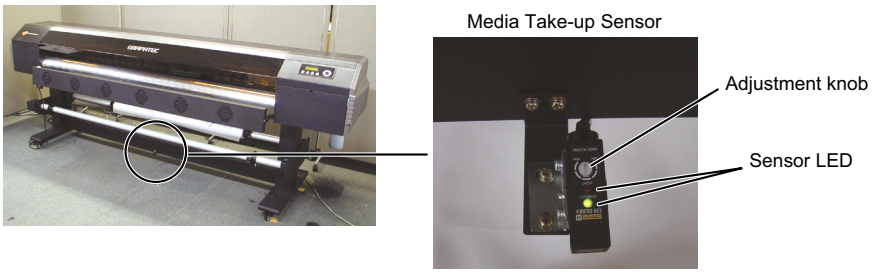


If the position of the paper core does not fit, adjust the position by changing the position of the flange.

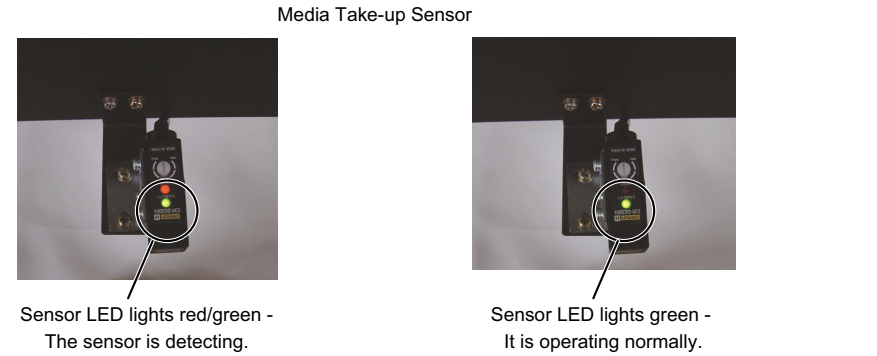
How to adjust the Media Take-up Sensor

CHECKPOINT ● **The Media Take-up Sensor may not work depending on the indoor conditions where it is used. In such a case, make an adjustment by using the following method.**

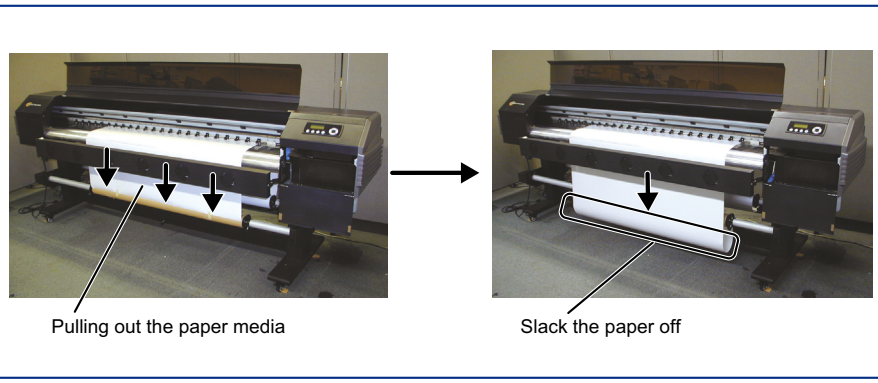
Set the Media Take-up System Switch to the "=" side (automatic taking-up paper), adjust the sensitivity by turning the adjustment knob so that the sensor correctly detects the feeding of the paper which allows automatic taking-up the paper.



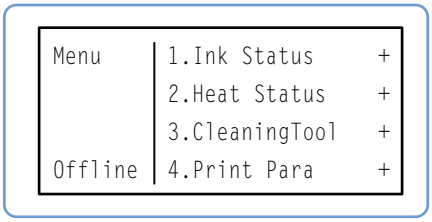
The sensor LED lights as indicated below:


Media Take-up Sensor
Sensor LED lights red/green -
The sensor is detecting.
Sensor LED lights green -
It is operating normally.

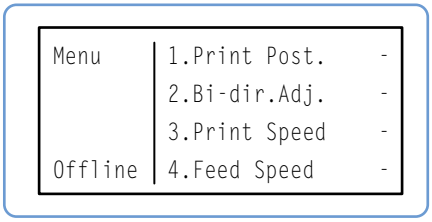
1. Feed the paper to the position of the Media Take-up Sensor.



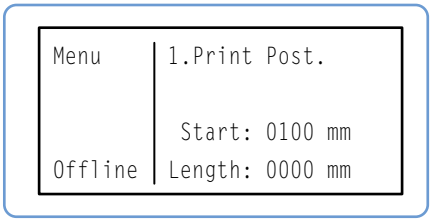
(1) Select [4.Print Para] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

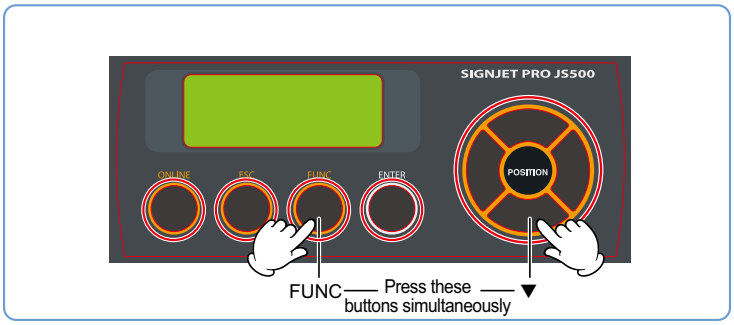


(2) Select [1.Print Post] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

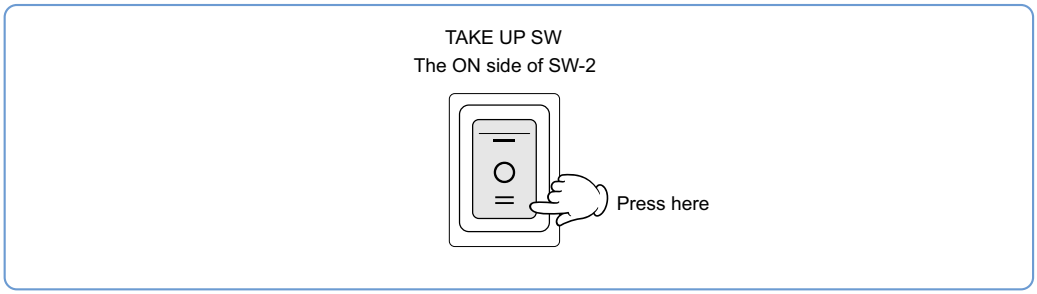


(3) Feed the paper until the paper reaches the height of the Media Take-up Sensor by pressing the [FUNC] key + [▼] key.

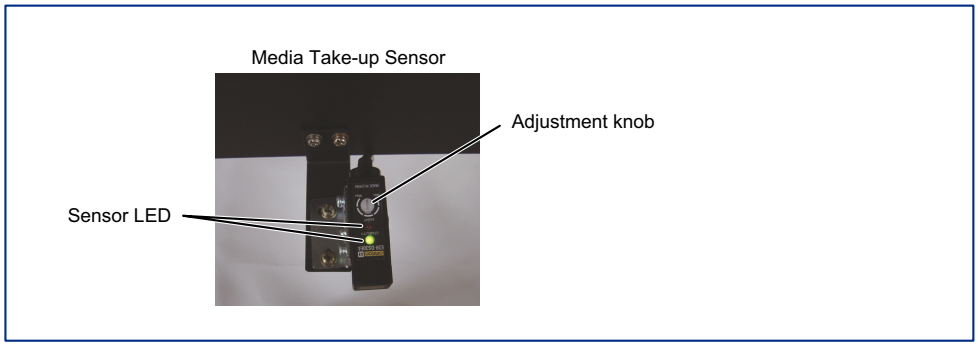




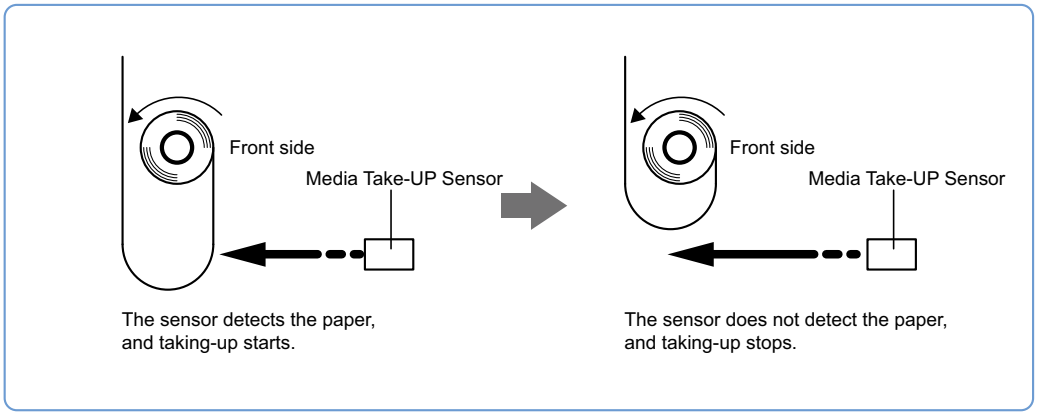
2. Set the Media Take-up System Switch to the "=" side (automatic taking-up).



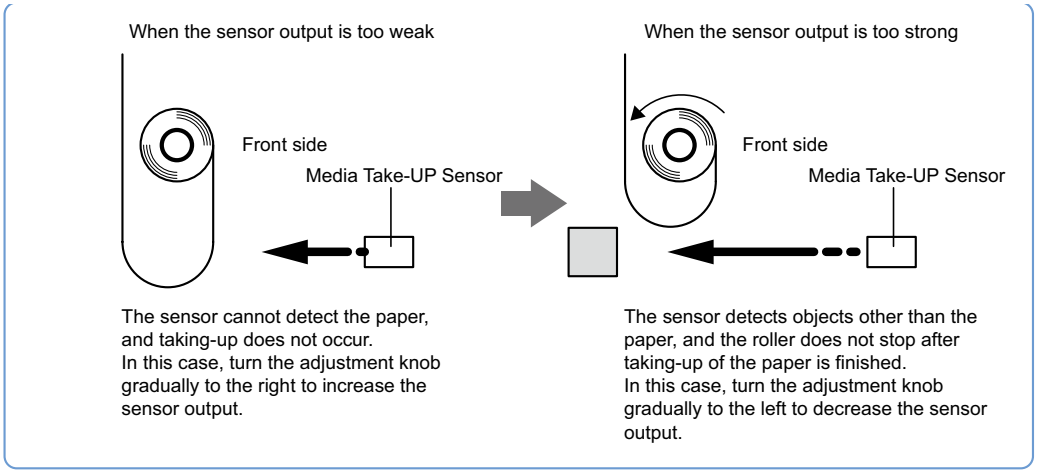
3. Adjust the sensitivity by turning the adjustment knob so as the sensor correctly detects the feeding of the paper which allows automatic taking-up the paper.



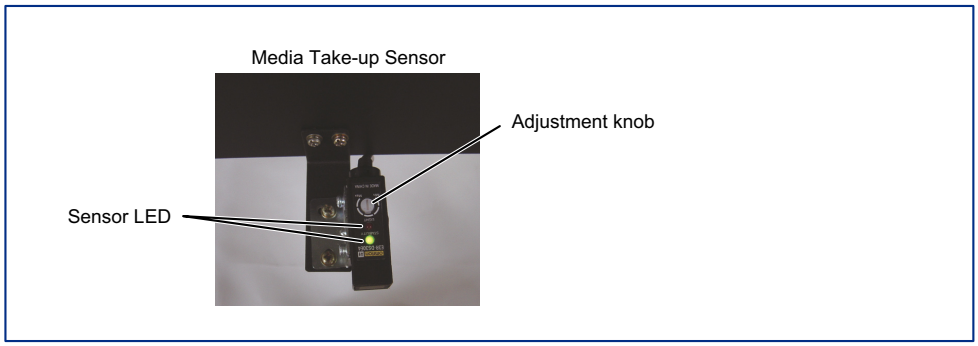
When the sensor is correctly adjusted


Front side
Media Take-UP Sensor
Front side
Media Take-UP Sensor
The sensor detects the paper, and taking-up starts.
The sensor does not detect the paper, and taking-up stops.

When the sensor is not correctly adjusted


When the sensor output is too weak
When the sensor output is too strong
Front side
Media Take-UP Sensor
Front side
Media Take-UP Sensor
The sensor cannot detect the paper, and taking-up does not occur. In this case, turn the adjustment knob gradually to the right to increase the sensor output.
The sensor detects objects other than the paper, and the roller does not stop after taking-up of the paper is finished. In this case, turn the adjustment knob gradually to the left to decrease the sensor output.

The adjustment knob of the sensor

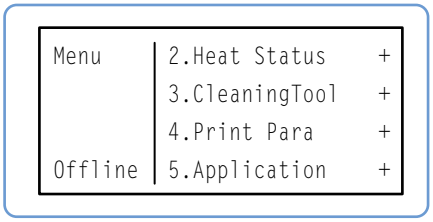


3.5 Detecting the paper width and the position where the paper is set

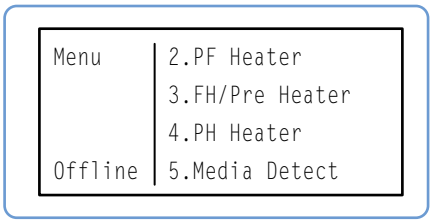
Setting the paper width detection (Media Detect) function

This printer automatically detects the paper width and the position where the paper is set. The detected value is reflected in the Print Position (printing starting position) setting. Set the Media Detect function by using the following steps.

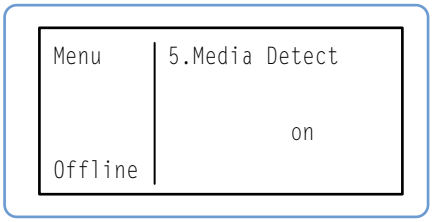
(1) Select [5.Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [5.Media Detect] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) Enable (on) or disable (off) the Media Detect function.



Press [▲▼] (Up/Down) keys to toggle between on and off. (Default value: on)

on: Enabled (default setting)

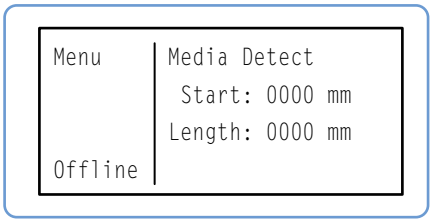
off: Disabled

(4) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value.

CHECKPOINT ● **The immediately preceding set value is enabled as the current set value.**

Executing the Media Detect function

(1) When the printer is turned on while the Media Detect function is set to "on", or when the media set lever is lowered and then raised, the following is displayed on the LCD.



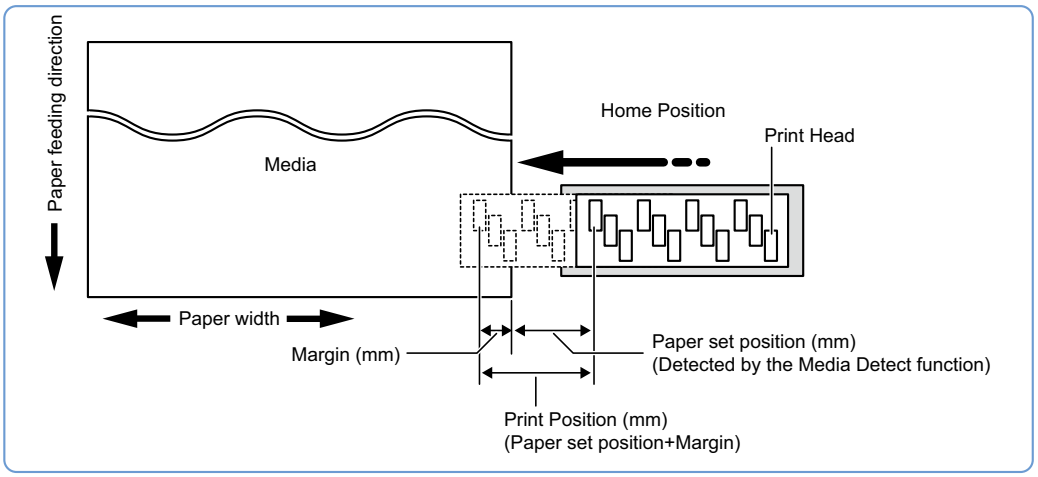
(2) Press the [ESC] key to cancel the set value. (In this case, the immediately preceding set value remains as the current set value)

Press the [ENTER] key to start the paper width detection. When the sensor successfully completes the paper width detection, the LCD displays "OK", and the position of the paper and the paper width are stored. The stored position of the paper is reflected in the set value for the Print Position (Print Post). See "3.6 Setting the Print Position (printing starting position)" described later for details.

3.6 Setting the Print Position (printing starting position)

Setting the moving direction of the Printhead Carriage

The set position of the paper which is loaded by the Media Detect function (a value from the Home Position to the set position of the paper) is reflected in the set value of the Print Position (Print Post) after adding the set value for the "Margin" (a set value for the margin on the paper edge). See "3.7 Setting the Margin (the margin on the paper edge)" described later on how to set the "Margin".



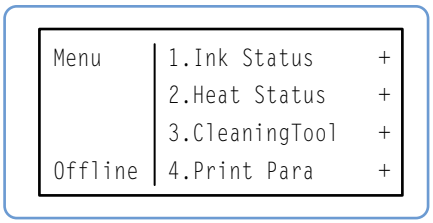
Press the [FUNC] key + [◀] position key to move the Printhead Carriage to the Print Position to allow confirmation of the actual printing starting position.

Press any key (other than the [FUNC] key or [◀] position key) to return the Printhead Carriage to the Home Position.

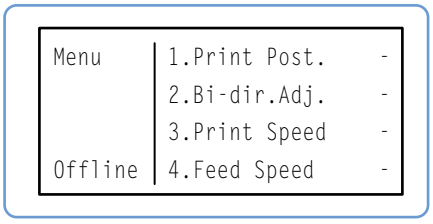
Changing the Print Position (printing starting position)

To change the setting of the Print Position (printing starting position), use the following steps. (Use the same steps when setting the Print Position manually while the Media Detect function is set to "off").

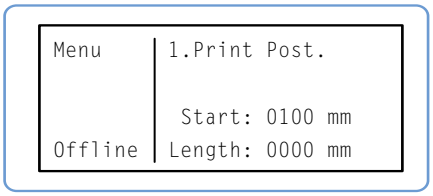
(1) Select [4.Print Para] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [1.Print Post.] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys.



Press the [FUNC] key + [▲▼] position key to move the Printhead Carriage to the Print Position to allow confirmation of the actual printing starting position.

Press any key (other than the [FUNC] key or [◀] position key) to return the Printhead Carriage to the Home Position.

(4) Press the ENTER key to store the set value.

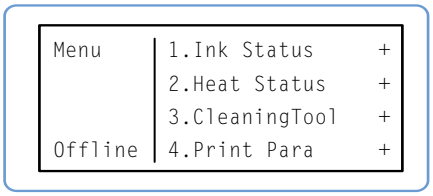
Press the ESC key to cancel the set value.

CHECKPOINT ● **The immediately preceding set value remains as the current set value.**

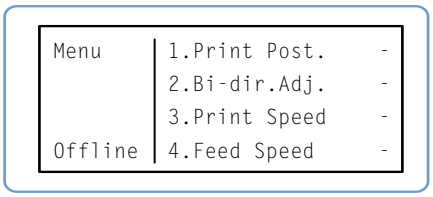
Setting the paper feeding direction

Set the Print Position (printing starting position) in the paper feeding direction by using the following steps.

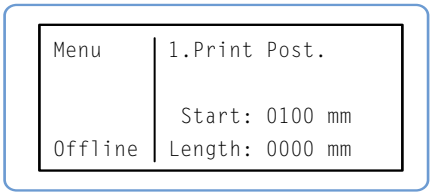
(1) Select [4.Print Para] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

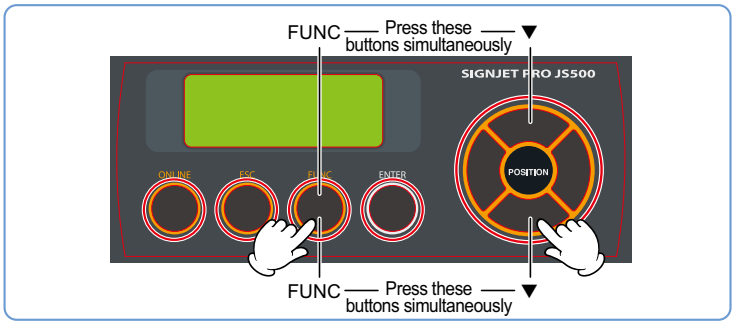


(2) Select [1.Print Post.] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) Press the [FUNC] key + [▲(▼)] position key to move the paper to the desired printing position.





[FUNC] key + [▼] position key: Feed the paper forward

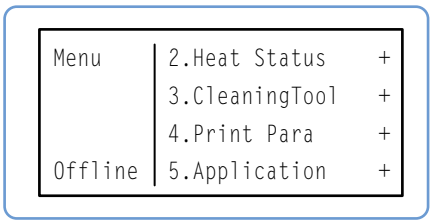
[FUNC] key + [▲] position key: Feed the paper backward

(4) After deciding the paper position, press the ENTER key to return to the menu screen.

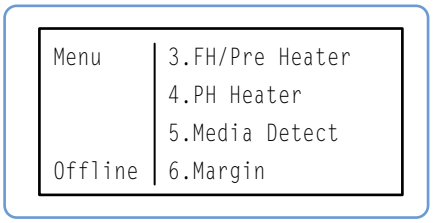
3.7 Setting the Margin (the margin on the paper edge)

Set the margin (mm) between the paper edge detected by the Media Detect function and the printing starting position. Use the following steps to set the value.

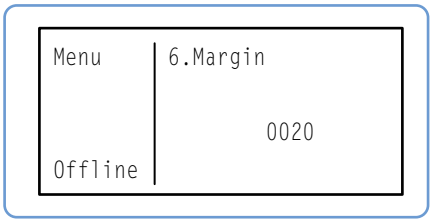
(1) Select [5.Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [6.Margin] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys.
Setting range: 0000 - (Default value: 0020)



(4) Press the [ENTER] key to store the set value.
Press the [ESC] key to cancel the set value. (In this case, the immediately preceding set value remains as the current set value)

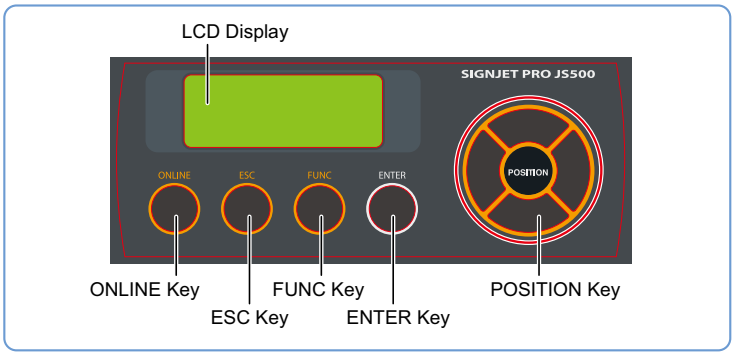
(5) To reflect the set Margin value to the printing starting position (Print Position), be sure to execute the Media Detect (paper width detection) function again after setting the margin. The set Margin value is reflected in the Print Position only after Media Detect is executed.

Chapter 4 Control Panel

This chapter describes basic functions of the keys and the Menu function of the Control Panel.

4.1 Control Panel

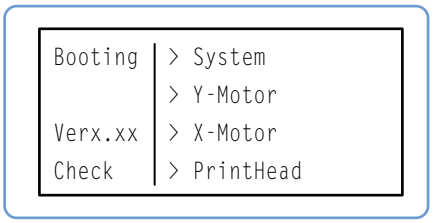
Control Panel



No.	Name	Functions
1	LCD Display	The LCD Display shows various menus.
2	ONLINE Key	This key switches Online/Offline. Press this key to toggle between Online and Offline, and [Online] or [Offline] is shown on the LCD Display. When this key is pressed for several seconds during printing, the printing is paused and the Online menu is displayed.
3	ESC Key	This key cancels the current job, and returns the menu display to one position above.
4	FUNC Key	This key is used with the Direction Key to specify operations. Press the [FUNC] key + [◀] key simultaneously to execute the test print when no printing is performed.
5	ENTER Key	This key confirms the selection of an item or the setting of a value.
6	POSITION Key	(1) Operations on the Control Panel ▲▼ (Up/Down) Key: Moves the cursor upward or downward. They are used to increase or decrease numerical values on the set value input screen. ◀▶(Left/Right) Key: They are used to specify the digit when increasing or decreasing numerical values on the set value input screen. (These keys move the cursor leftward or rightward). (2) Other functions See "4.4 Functions of each menu" described later for each function.

4.2 The LCD display when the power is turned on

When the power is turned on, System, Y-Monitor, X-Monitor and PrintHead are checked after the Printer Name is displayed.

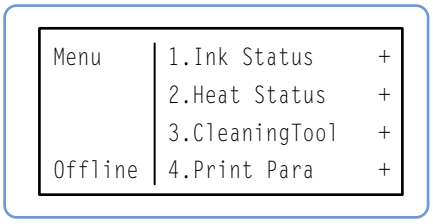


After these checks are complete, operational checks of the Y Monitor and X Monitor are performed, and then the Auto Cleaning is performed.

(Auto Cleaning operations take around 2 minutes.)

After all the checks are successfully completed, the following Main Menu is displayed.

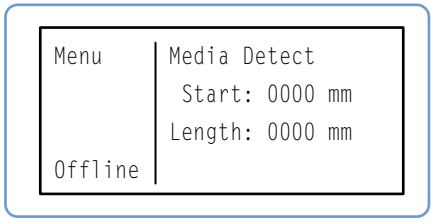
Main Menu (When the Media Detect is set to "Off")



The "+" sign which is displayed on the right-hand edge of the Menu indicates that the item has subordinate items in the menu hierarchy.

When "-" is displayed, it indicates that the item is in the lowest menu hierarchy.

Main Menu (When the Media Detect is set to "On")

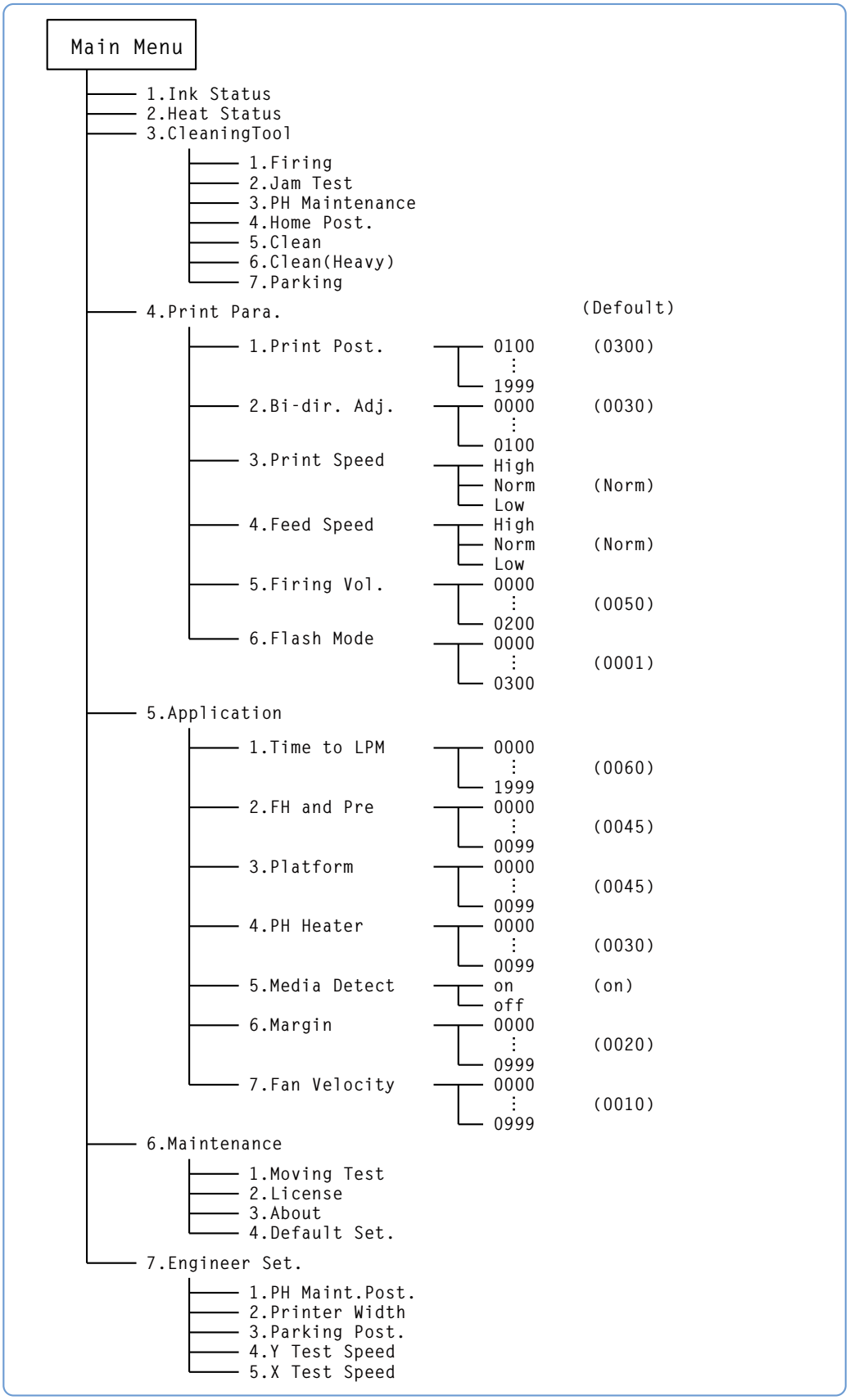


Pressing the [ENTER] key displays the Main Menu screen after Media Detect operations.

Pressing the [ESC] key displays the Main Menu screen without Media Detect operations.

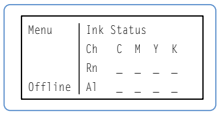
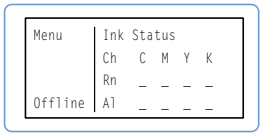
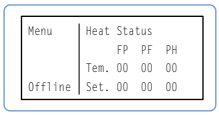
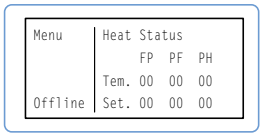
4.3 Menu Tree

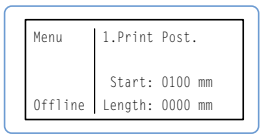
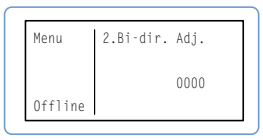
Menu Tree

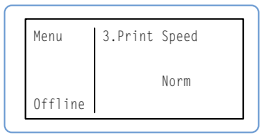
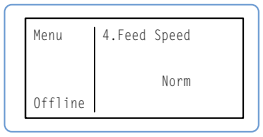
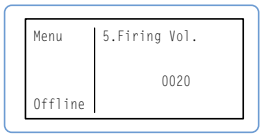


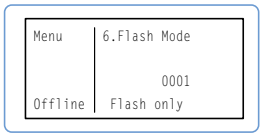
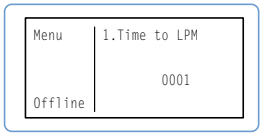
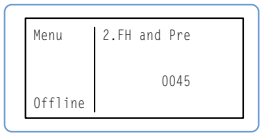
4.4 Functions of each menu

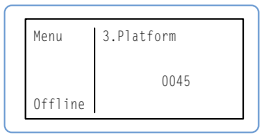
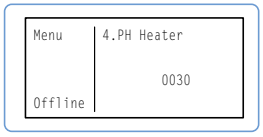
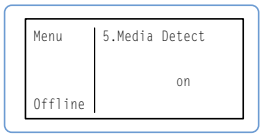
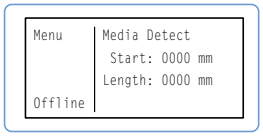
Menu

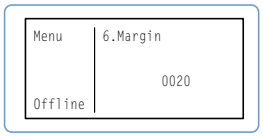
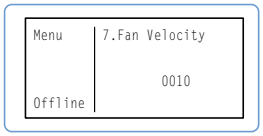
Main Menu	Sub Menu	Function description
1. Ink Status		Displays the status of each ink cartridge.  Ch: Indicates each ink cartridge (Channel). Rn: Indicates the pump which is operating. Al: Indicates the Channel for which an alarm is activating. When ink cartridges are not set or when ink cartridges are empty, an alarm is activated, and the Channel is displayed. After the relevant ink cartridge is replaced, the alarm is automatically deactivated, and the printer returns to its normal operation. Pressing the [Direction] key on this screen allows cleaning operations (positive pressure) for the ink cartridge which corresponds to each key. See "6.4.3 Manual Cleaning" described later for details. [▶]Key: Cyan [▲]Key: Magenta [◀]key: Yellow [▼]Key: Black
2. Heat Status		Displays the status of each heater.  FP: Front Heater and Pre Heater PF: Plat from Heater PH: PH Heater Tem: Indicates the current heater temperature. Set: Indicates the set heater temperature.
3. Cleanig Tool	1. Firing	Performs an empty ejection of ink to discharge the ink which becomes thick in the Print Head Nozzle. Pressing the [ENTER] key displays a "Busy" message on the LCD, and then an empty ejection is performed. The "Busy" message disappears after the empty ejection is complete. The number of times the empty ejection function is performed can be changed on the Sub Menu "Firing Vol." of the Menu "Print Para". To increase the number of times of the empty ejection function is performed, increase the set value for the "Firing Vol." See "6.3 Firing (empty ejection)" described later for details about firing operations.
	2. Jam Test	Press the [Enter] key to perform the Test Print. See "6.2 Jam Test" described later for details about the Jam Test.
	3. PH Maintenance	Press the [Enter] key to move the P/H carriage to the PH Maintenance Position.
	4. Home Post	Press the [Enter] key to move the P/H carriage to the Home Position.

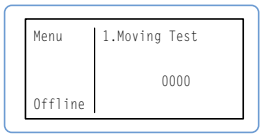
Main Menu	Sub Menu	Function description
	5. Clean	Press the [Enter] key to perform the Cleaning operations. The P/H carriage moves to the Home Position, and the ink pump operates for around 6 seconds. After a waiting time (operations stop) of around 60 minutes, roller cleaning operations are performed. The Firing is performed to complete this operation. See "6.4 Printhead Cleaning" described later for details.
	6. Clean (Heavy)	Press the [Enter] key to perform the Heavy Cleaning operations. The P/H carriage moves to the Home Position, and the ink pump operates for around 15 seconds. After a waiting time (operations stop) of around 70 minutes, roller cleaning operations are performed, and the printheads are capped. ⚠ CAUTION **This function consumes a huge amount of ink. Use it only when recovering nozzles after a robust fixing of ink.** **See "6.4. Printhead Cleaning" described later for details.**
	7. Parking	Pressing the [Enter] key moves the P/H carriage to the Capping Position, and the printheads are capped.
4. Print Para	1. Print Post	This function changes the set value for the printing starting position (mm) from the Home Position.  "XXXX" The value which is displayed in a blinking mode indicates the printing starting position of the moving direction of the P/H carriage (Y direction). To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0100 - 1999 (Default value: 0300) Press the [FUNC] + [◀] keys to move the P/H carriage to the set Print Position. Press any key (other than the [FUNC] key or [◀] position key), to return the P/H carriage to the Home Position. Press the [FUNC] + [▲▼] (Up/Down) keys to move the paper forward or backward. Align the paper to the printing starting position. Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value.(The immediately preceding set value remains as the current set value.) See "3.6 Setting the Print Position (printing starting position)" described later for details on how to set the printing starting position.
	2. Bi-dir Adj.	Adjust the Bi-dir setting.  To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0199 (Default value: 0030) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.)

Main Menu	Sub Menu	Function description
	3. Print Speed	Set the scan speed of the P/H carriage.  Three-stage setting is possible for the scan speed. Press [▲▼] (Up/Down) keys to specify the setting. (Default value: Norm) Norm: Recommended speed High: Increases the P/H carriage speed with lowered printing quality. Low: Increases the printing quality with lowered P/H carriage speed. Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.)
	4. Feed Speed	Set the paper feed speed.  Three-stage setting is possible for the paper feed speed. Press [▲▼] (Up/Down) keys to specify the setting. (Default value: Norm) Norm: Recommended speed High: The paper feed speed increases. Low: The paper feed speed decreases. Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.)
	5. Firing Vol.	Set the number of empty ejections.  "XXXX" The value which is displayed in a blinking mode indicates the set value for the number of empty ejections. To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0100 (Default value: 0020) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) See "6.6 Changing the Firing Volume (the amount of empty ejections)" described later for detailed setting.

Main Menu	Sub Menu	Function description
	6. Flash Mode	Set the Flash Mode (the mode which performs empty ejections during printing).  To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0300 (Default value: 0001) 0000 - 0009 : Flash only 0010 - 0300 : Auto clean When the setting is "0000", empty ejections are not performed during printing. When the setting is 0001 - 0300, empty ejections are performed at the Home Position according to the set value for the number of passes. See "6.5.1 Flash Mode" described later for details about settings. Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.)
5. Application	1. Time to LPM	Set the time interval (min) to move to the LOW power mode when the printer is in the standby mode.  To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 1999 (Default value: 0060) See "7.5 Time to LPM (Low Power Mode)" described later for details about the LOW power mode.
	2. FH and Pre	Set the temperature (°C) for the Front Heater and Pre Heater.  To change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0099 (Default value: 0045) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) If a value of 60°C or over is specified, a protection circuit works, and the temperature does not move exceeding 60°C.

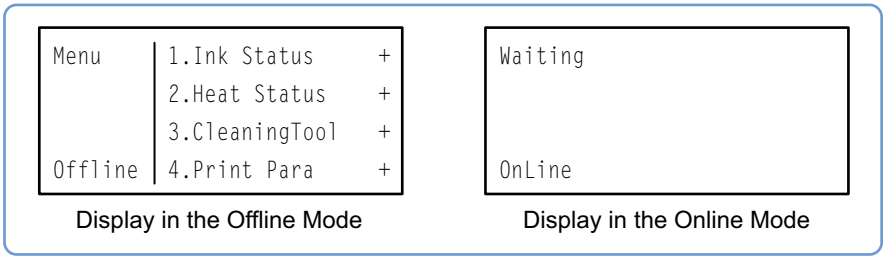
Main Menu	Sub Menu	Function description
	3. Platform	Set the temperature (°C) for the Platform Heater.  To change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0099 (Default value: 0045) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) If a value of 60°C or over is specified, a protection circuit works, and the temperature does not move exceeding 60 °C.
	4. PH Heater	Set the temperature (°C) for the PH Heater.  To change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0099 (Default value: 0030) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) If a value of 60°C or over is specified, a protection circuit works, and the temperature does not move exceeding 60°C.
	5. Media Detect	Enable (on) or disable (off) the Media Detect function.  Press [▲▼] (Up/Down) keys to toggle between on and off. (Default value: on) on: Enabled (default setting) off: Disabled Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) When the set lever is raised and then lowered while the setting is "on", the following is displayed on the LCD.  Press the [ESC] key to cancel the Media Detect function. (In this case, the immediately preceding set value remains as the current set value). Press the [ENTER] key to start the Media Detect function. When the sensor successfully completes the paper width detection, the LCD displays "OK", and the position of the paper and the paper width are stored. The set position of the paper which is loaded here (a value from the Home Position to the position of the paper) is reflected in the set value of the Print Position after adding the set value for the "Margin" (a set value for the margin on the paper edge). See "3.5 Detecting the paper width and the position where the paper is set" described above for details.

Main Menu	Sub Menu	Function description
	6. Margin	Set the margin (mm) between the paper edge and the printing starting position.  "XXXX" The value which is displayed in a blinking mode indicates the margin from the paper edge. To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0999 (Default value: 0020) Press the [ENTER] key to store the set value. Press the [ESC] key to cancel the set value. (The immediately preceding set value remains as the current set value.) ⚠ CAUTION **To reflect the setting of the margin to the printing starting position (Print Position), be sure to execute the Media Detect (paper width detection) function again after setting the margin on this screen. The setting of the margin is reflected to the Print Position only after Media Detect is executed. See "3.7 Setting the Margin (the margin on the paper edge)" described above for details.**
	7. Fan Velocity	Adjust the air volume of the paper suction fan.  To change the value by using [▲▼] (up/down) keys. Setting range: 0000 - 0999 (Default value: 0010) Set the value to "0000" to turn it OFF (the fan is not turned on with this setting). Ten-stage setting is possible for the air volume of the fan by using a value between 0001 and 0010 (the value "0010" indicates the maximum). Raise the set lever to start rotation of the fan and suction of paper. Lower the set lever to stop the fan.

Main Menu	Sub Menu	Function description
6. Maintenance	1. Moving Test	Performs a moving test of the PH carriage and the Media Feed Roller.  Press the [ENTER] key to start the test. The P/H carriage moves from right and left, and the Media Feed is performed for each rotation. In this case, the P/H does not perform ejection. The numeric value on the LCD indicates the number of rotations of the P/H carriage's movement. Press the [ESC] key to quit the test.
	2. License	Unused
	3. About	Displays the Version information of this printer.
	4. Default Set.	Reset the setting to default values (factory default setting). Pressing the [FUNC] + [ENTER] keys simultaneously displays a "Busy" message on the LCD, and the reset operation is performed. ⚠ CAUTION **Please be careful to perform this operation because all the set values are reset to the factory default setting. It is recommended that the user take note of the current set values before executing the reset operation.**
7. Enginner	1. PH Maint. Post.	Display the PH Maintenance setting. * This setting is configured as the factory default setting and cannot be changed.
	2. Printer Width	Displays the setting of the maximum printing width for this printer. * This setting is configured as the factory default setting and cannot be changed.
	3. Parking Post.	Display the Parking Post. setting. * This setting is configured as the factory default setting and cannot be changed.
	4. Y Test Speed	* This setting is configured as the factory default setting and cannot be changed.
	5. X Test Speed	* This setting is configured as the factory default setting and cannot be changed.

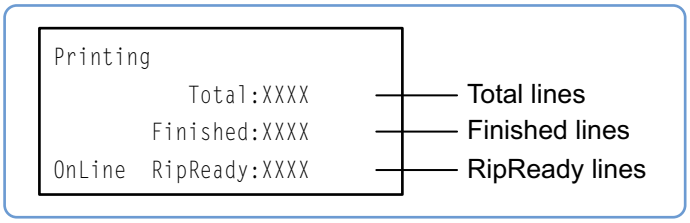
4.5 Online Mode

Press the [Online] key from the Main Menu to switch to the Online Mode.



Display in the Offline Mode　　Display in the Online Mode

The following screen is displayed when data is transferred from a PC.



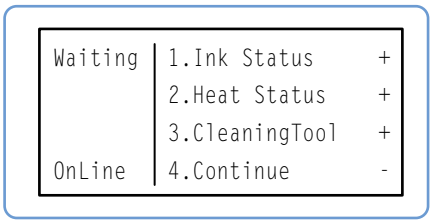
Total:　The total number of data lines (the number of passes).

Finish:　The number of lines of printing completed.

Rip Ready:　The number of data lines which have been received by the printer.

Press the ONLINE key for an extended period of time to abort the printing, and the P/H Carriage returns to the Home Position and is paused.

The LCD shows the following.



When ink ejection from any nozzle stops during printing, pause the printing, and perform printhead cleaning.

After cleaning is complete, printing can be resumed by selecting [4.Continue] and then pressing the [ENTER] key.

Select the [5.Cancel] key to abort the printing.

Chapter 5 Software

This chapter describes GPU (Graphtec Print Utility) and JS RIP.

5.1 "GPU" and "JS RIP"

Major characteristics of "GPU" and "JS RIP"

GPU (Graphtec Print Utility)

This utility allows adjustment of the Printheads (adjustment of X and Y positions and bidirectional position adjustment) and media feed compensation.

JS RIP

This utility allows conversion of images for printing.

<Major functions>

- Import of .BMP, .JPG and .TIFF files is possible.
- Setting of Color Files is possible.
- Setting of printing conditions (resolution, unidirectional or bidirectional) is possible by associating with GPU.
- Adjustment and setting of printing size, quantity and layout is possible.

Operation systems supporting "GPU" and "JS RIP"

- Windows 2000
- Windows XP
- Windows Vista

This manual describes operations on Windows XP.

Software versions

GPU: Ver.2.51

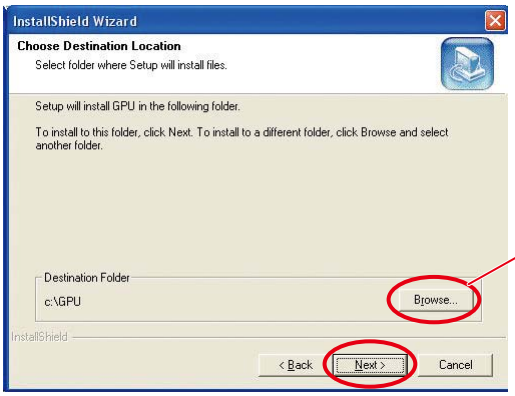
JS RIP: Ver.1.70.271

5.2 Installing "GPU"

To reinstall GPU, uninstall it first.
Perform steps described in "5.3 Uninstalling GPU" first.

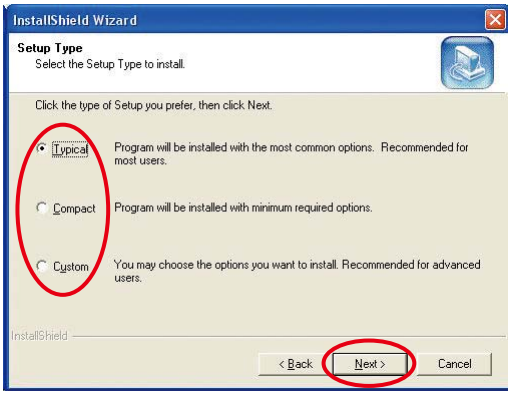
1. Install "GPU" from the attached CD.
   Execute "Setup.exe".

2. Browse and select the location for installation, and then click [Next].

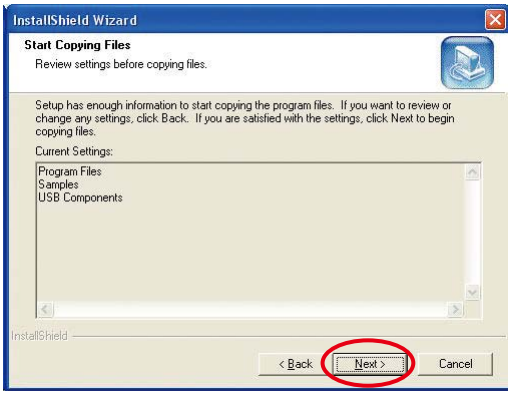

InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install GPU in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
c:\GPU
Browse...
InstallShield
< Back
Next >
Cancel

Browse and select the location for installation.

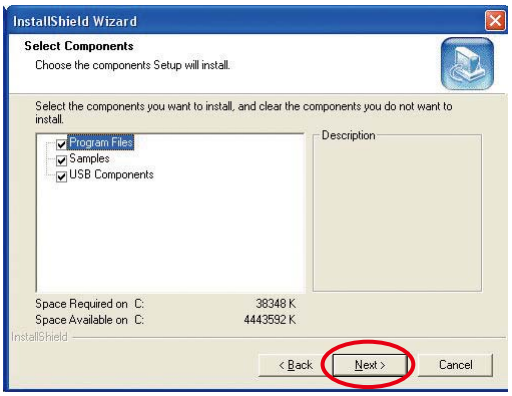
3. Browse and select the type for installation, and then click [Next].
   * Recommended installation type: Typical
   - Typical: Install "Program files", "Samples", and "USB Components".
   - Compact: Install "Program files".
   - Custom: Make selection of components to be installed from "Program files", "Samples", and "USB Components".


InstallShield Wizard
Setup Type
Select the Setup Type to install.
Click the type of Setup you prefer, then click Next.
Typical
Program will be installed with the most common options. Recommended for most users.
Compact
Program will be installed with minimum required options.
Custom
You may choose the options you want to install. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

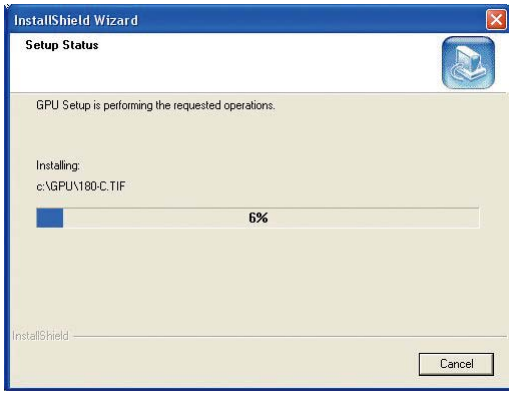
4. The screen is switched as follows, and pressing the [Next] starts installation.


InstallShield Wizard
Start Copying Files
Review settings before copying files.
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Program Files
Samples
USB Components
InstallShield
< Back
Next >
Cancel

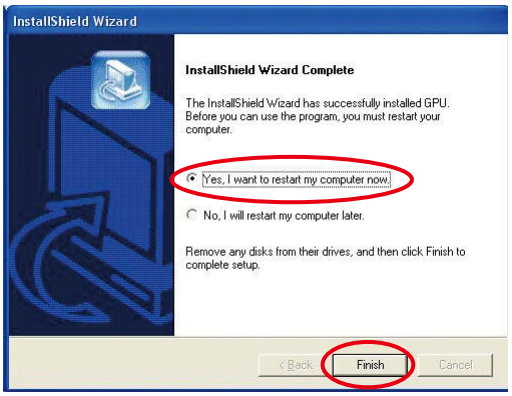
When "Custom" is selected as the Set Up Type, the following screen is displayed. Select the files to be installed and click [Next] to proceed with installation.



Installation starts.

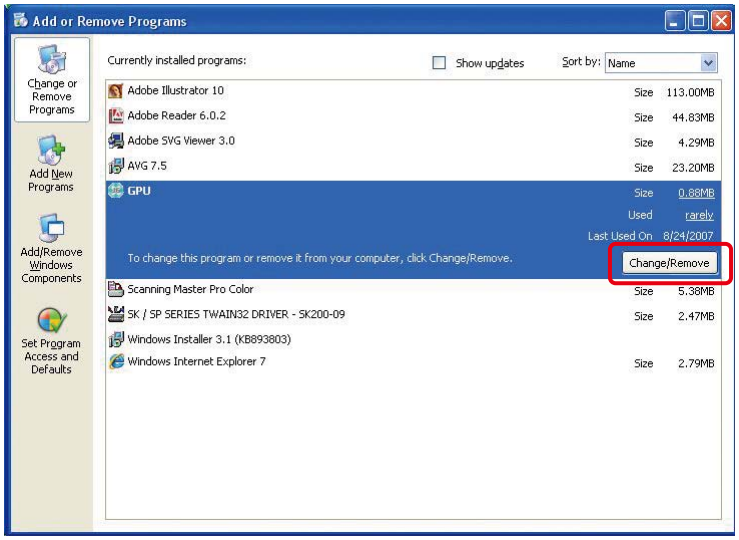


5. The following screen is displayed after installation is complete. Restart your PC before using "GPU".

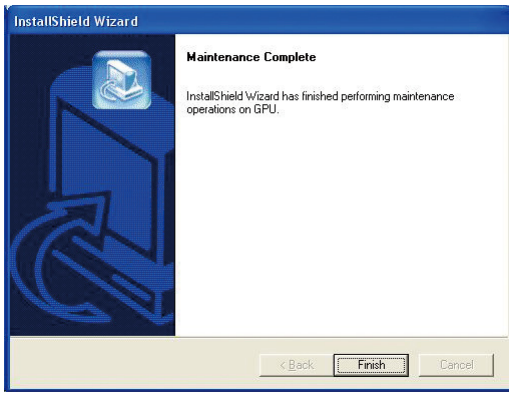

InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed GPU. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

5.3 Uninstalling "GPU"

1. Select "GPU" from Add or Remove Programs on the Control Panel.


Add or Remove Programs
Change or Remove Programs
Add New Programs
Add/Remove Windows Components
Set Program Access and Defaults
Currently installed programs:
Show updates
Sort by: Name
Adobe Illustrator 10 Size 113.00MB
Adobe Reader 6.0.2 Size 44.83MB
Adobe SVG Viewer 3.0 Size 4.29MB
AVG 7.5 Size 23.20MB
GPU Size 0.88MB
Used rarely
Last Used On 8/24/2007
To change this program or remove it from your computer, click Change/Remove.
Change/Remove
Scanning Master Pro Color Size 5.38MB
SK / SP SERIES TWAIN32 DRIVER - SK200-09 Size 2.47MB
Windows Installer 3.1 (KB893803)
Windows Internet Explorer 7 Size 2.79MB

2. Perform uninstallation according to the instructions on the screen.
   The following screen is displayed after successful completion.



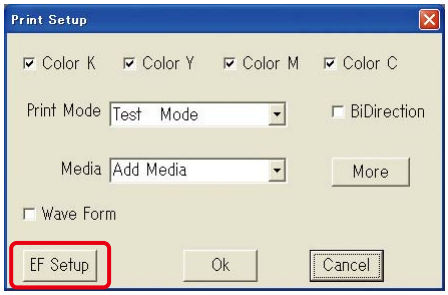
5.4 Start up "GPU"

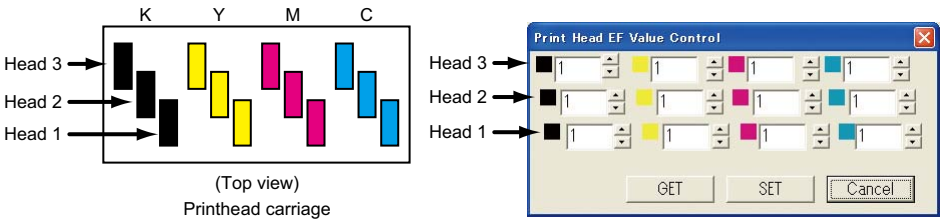
1. Double-click the icon on the desktop.
   Or start up from Start → All Programs → GPU.

5.5 Explanation of functions in the Print Setup

Open [Print Setup].

1. Setting the EF Setup
   This function allows setting of the EF value.
   To change the set value, the printer should be online. Set the printer online to allow for communication.
   Setting range is 0.5 - 1.5.
   The value can be directly inputted or can be specified by using the spin button.
   GET: Load the set value from the printer.
   SET: Set the value on the printer by using a PC.
   Cancel: Quit this screen. The set value which is being inputted is discarded.

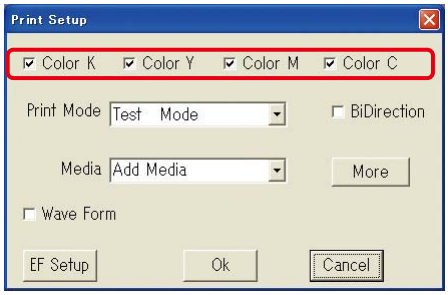




* When the application is started up, all the values are shown as 1.00.

To change the input value, perform the upload operation first to display the latest setting before changing.

2. Setting the printing colors
   Check the checkbox of the colors to use for printing.
   Without checking these colors, printing is not performed.

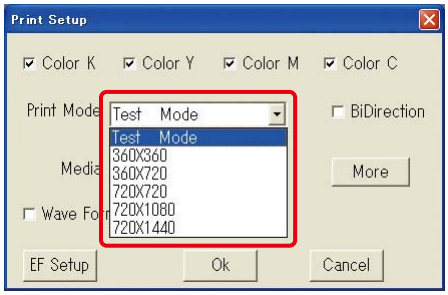


3. Setting the Print Mode

   There are five Print Modes.

   Select according to your purpose and status of use.

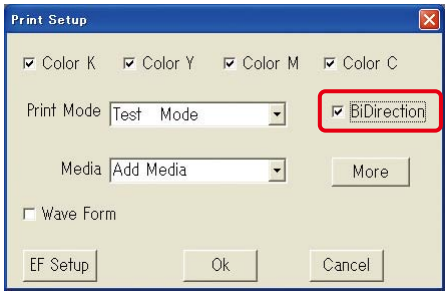
   • Test Mode (1Pass)
   • 360×360 dpi (2Pass)
   • 360×720 dpi (4Pass)
   • 720×720 dpi (8Pass)
   • 720×1080 dpi (12Pass)
   • 720×1440 dpi (16Pass)



4. Setting the Direction

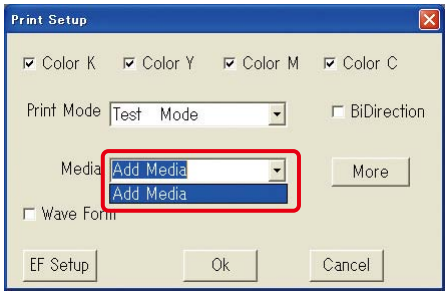
   Select the unidirectional or bidirectional printing.

   Check the check box to select the bidirectional or uncheck to select the unidirectional printing.



5. Setting the Media

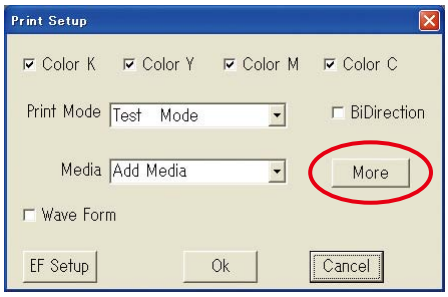
   • This function allows registration of media types.
     Use this function to use media which are made of various materials or with different thicknesses.
   • Values of the "Feed Compensation" in the "Important Setup" can be adjusted for each media and can be stored in the memory.
   • Settings other than the "Feed Compensation" are common to all the media.
   • To set the name of the media, select Add Media to highlight the characters. Input the name of the new media, and press the Enter key.
   • Up to five types can be inputted.
   • Up to 19 single-byte characters can be inputted.
   • To delete the media, click the desired media to highlight the name, and press the Delete key.



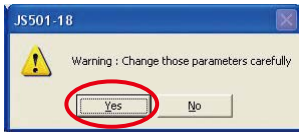
6. Setting the Important Setup

This function allows adjustment of the head.

1) Click [More].



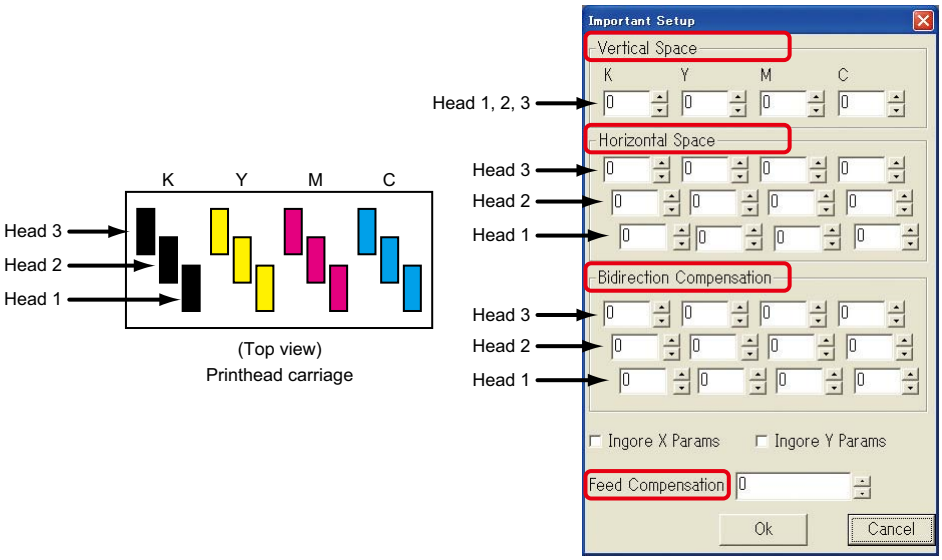
2) A warning message is displayed. Select [Yes] to proceed to the Important Setup. Press [No] to abort this operation.



3) This function allows adjustment of the Important Setup.

Items which can be adjusted are "Vertical Space", "Horizontal Space", "Bidirection Compensation" and "Feed Compensation".

See "5.6 Adjusting the position of the head" for details.

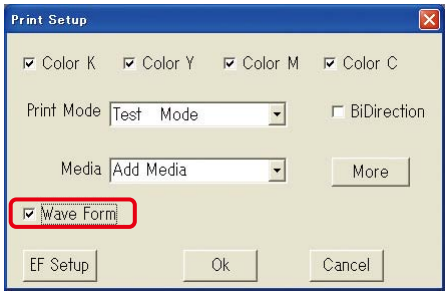


7. Setting the Wave Form

Using this function, banding during printing may be mitigated.

Change specifications depending on the printing conditions.

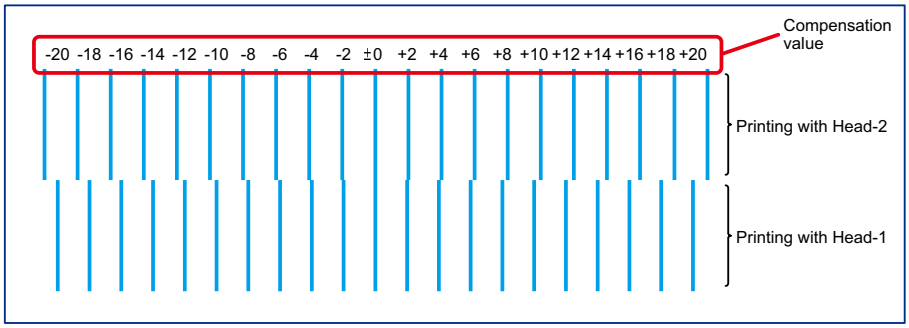
Check the check box to activate the Wave function.



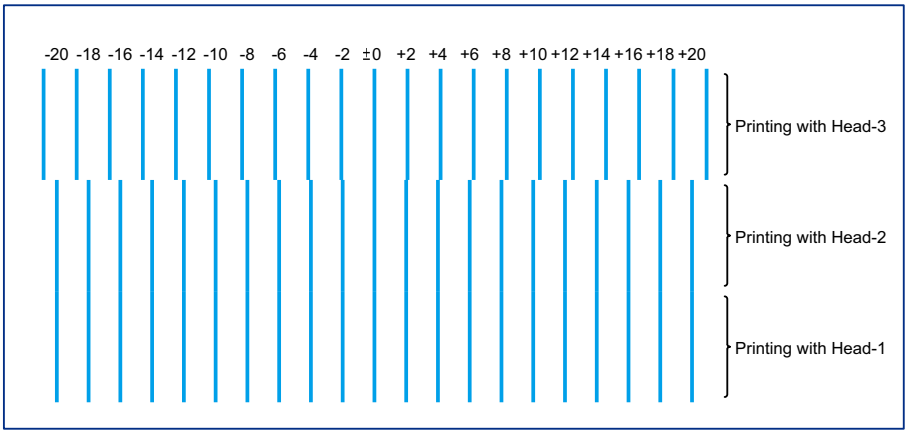
5.6 Adjusting the position of the head

* Perform printing after setting the Print Mode to the Test Mode.
* Make an adjustment under the same conditions where the actual printing is performed.
  Items to be checked: EF Value, PH Heater, Print Speed, Feed Speed, height of the head and thickness of media (type).
* Perform printing without using the Wave Form.

1. Make an adjustment of the position in the Horizontal Space of the head of the same color.
   1) Make an adjustment of Head-1 and Head-2 first.
      Open the file "1_H_Space1-2_12HEAD.group" and start printing.
      * For 8-head model printers, open "1_H_Space1-2_8HEAD.group".

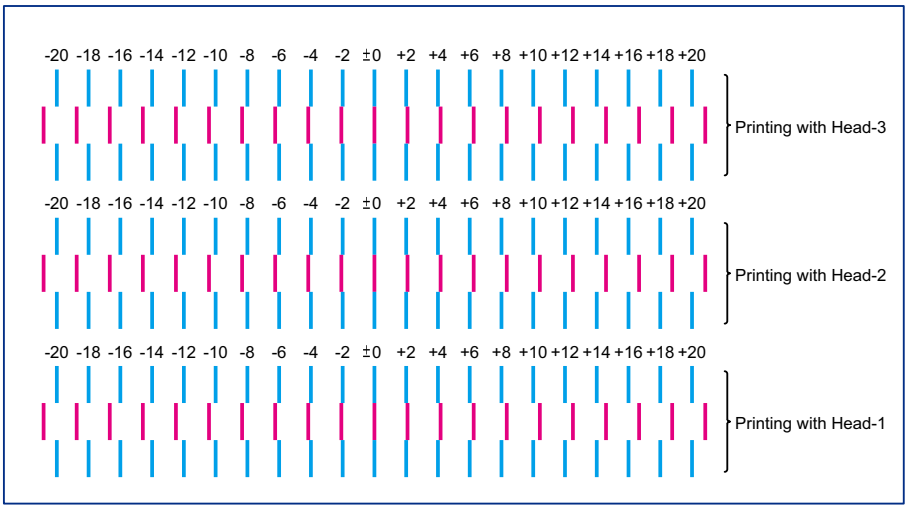


   2) Check the results of printing, select where the lines printed by Head-1 and Head-2 are aligned most closely as one line, and input the compensation value indicated with the line in the column for the Head-2 of each color.
      * If an adjusted value has already been inputted, add the above value to the existing value.
   3) Perform printing again to confirm that the printing of lines of each color is aligned almost as one line where ±0 is indicated.
      * For the 8-head model printer, adjustment is complete. Proceed to "5.6.1) Adjust the space between other colors (Horizontal Space)".
   4) Make an adjustment of Head-3. Open the file "2_H_Space12-3_12HEAD.group" and start printing.



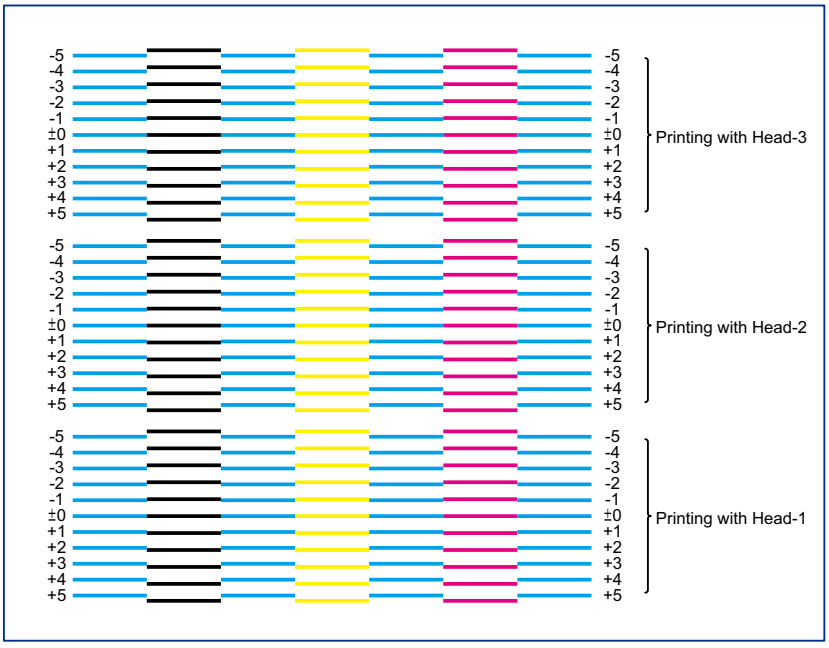
   5) Check the result of printing, select where the lines printed by Head-1, Head-2 and Head-3 are aligned most closely as one line, and input the compensation value indicated with the line in the column for the Head-3 of each color.
      * If an adjusted value has already been inputted, add the above value to the existing value.
   6) Perform printing again to confirm that the printing of lines of each color is aligned in one line where ±0 is indicated.
      If the adjusted condition is not what is intended, repeat steps from 1 to 6.

2. Make an adjustment of the space between cyan color and other colors (Horizontal Space).
   1) Open the file "3_H_Space_Color_12HEAD.group" and start printing.
      * For 8-head model printers, open "2_H_Space_Color_8HEAD.group".



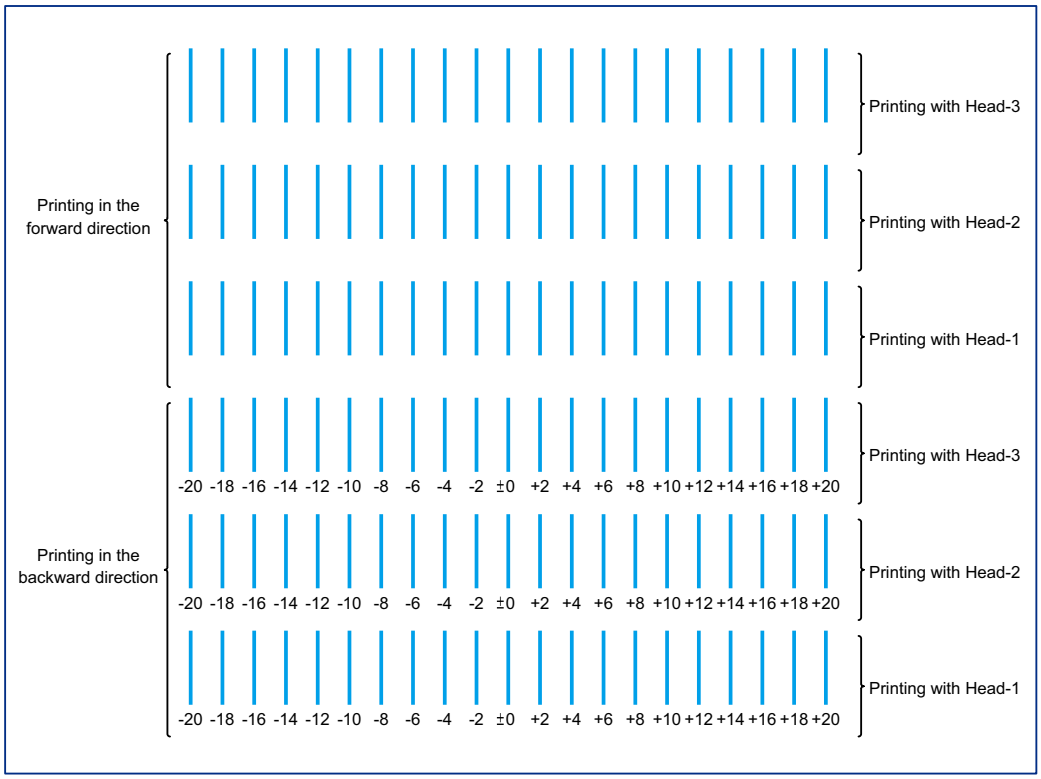
   2) Check the results of printing, select where the printed lines are aligned most closely as one line, and input the compensation value indicated with the line.
      * If an adjusted value has already been inputted, add the above value to the existing value.
   3) Perform printing again to confirm that the printing of lines of each color is aligned most closely as one line where ±0 is indicated.
      If the adjusted condition is not what is intended, repeat steps from 1 to 3.

3. Make an adjustment of the Vertical Space.
   1) Open the file "4_V_Space_12HEAD.group" and start printing.
      * For 8-head model printers, open "3_V_Space_8HEAD.group".



   2) Check the result of printing, and input the compensation value indicated with the line.
   3) Perform printing again to confirm that the printing of lines of each color is aligned most closely as one line where ±0 is indicated.
      If the adjusted condition is not what is intended, repeat steps from 1 to 3.

4. Make an adjustment of the bidirectional printing.
   1) Open the file "5_BiD_123_12HEAD.group".
      * For 8-head model printers, open "4_BiD_12_8HEAD.group".


Printing in the forward direction
Printing with Head-3
Printing with Head-2
Printing with Head-1
Printing in the backward direction
Printing with Head-3
Printing with Head-2
Printing with Head-1
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 ±0 +2 +4 +6 +8 +10 +12 +14 +16 +18 +20

   2) Check the Bi Direction checkbox to activate the bidirectional printing.
   3) Perform printing so as the printing with the first pass and the second pass is almost overlapped.
      To make the media feed amount close to "0", adjust the value for the Feed Compensation.
      * As a rough indication, a setting around "-15000" (Around "-10000" in the case of 8-head model printers) makes the media feed amount close to "0". Make an adjustment of the value where appropriate.
   4) Print the file "5_BiD_123_12HEAD.group" ("4_BiD_12_8HEAD.group").
   5) Check the results of printing, select where the printed lines are aligned most closely as one line, and input the compensation value indicated with the line.
   6) Feed the paper manually more than around 6 cm.
      See "3.6 Set the Print Position" for details.
   7) Perform printing again to confirm that the printing of lines of each color is aligned in one line where ±0 is indicated.
      If the adjusted condition is not what is intended, repeat steps from 1 to 7.

5. Make an adjustment of the media feed amount.
   1) Open the file "6_Feed Compensate_12HEAD.group".
      * For 8-head model printers, open "5_Feed Compensate_8HEAD.group".
   2) Set the value for the Feed Compensation to "0".
   3) Select the number of passes (resolution) for printing.
      • Setting for each pass can be stored in the memory.
      * To do so, setting for each pass is required.
   4) Perform printing.
   5) Check the results of printing, and input the compensation value indicated with the line.
      If white stripes are shown, increase the value.
      If black stripes are shown, decrease the value.
   6) Perform printing again to confirm that there is no banding.
      If the adjusted condition is not what is intended, repeat steps from 1 to 6.

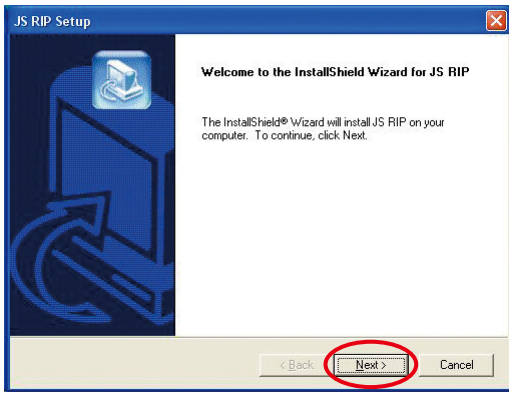
* Take a memo of the set values after all the settings are complete.
* Set values are stored on your PC. Changing your PC may change the set values for the Important Setup.
* After changing the settings for EF Value, PH Heater, Print Speed, Feed Speed, height of the head and thickness of media (type), the results of adjustment may be different. If you change printing conditions, print the patterns for adjustment again, and make another adjustment if the results are not satisfactory.

5.7 Installing "JS RIP"

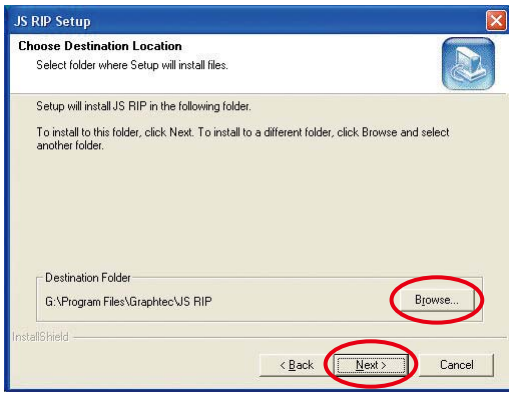
1. Install "JS RIP" from the attached CD.
   Execute "JS RIP_setupVer*.**.*.exe".

InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install on your computer. This may take a few moments.
Reading contents of package...
InstallShield
< Back
Next >
Cancel

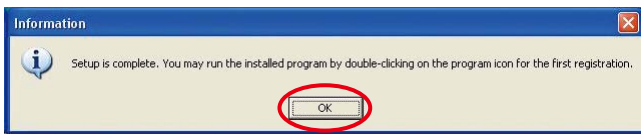
2. After a while, the following screen will be displayed.


JS RIP Setup
Welcome to the InstallShield Wizard for JS RIP
The InstallShield® Wizard will install JS RIP on your computer. To continue, click Next.
< Back
Next >
Cancel

3. Click [Next].
4. Browse and select the location for installation. Click [Next] after selecting the desired location.

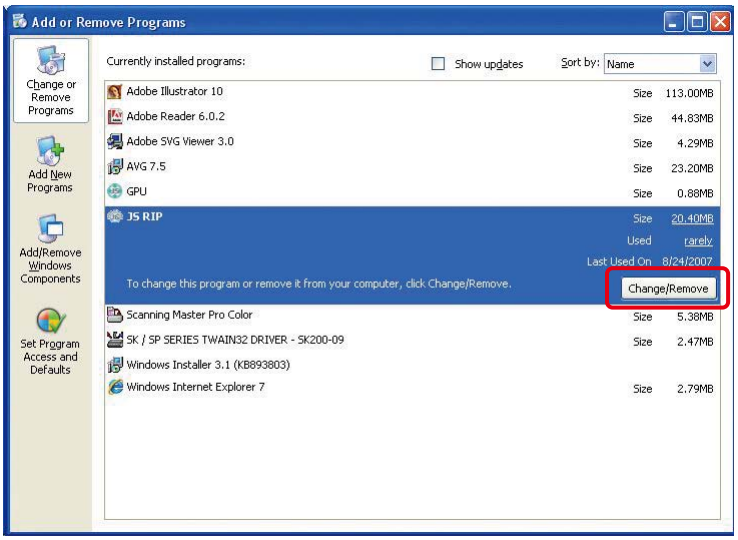

JS RIP Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install JS RIP in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
G:\Program Files\Graphtec\JS RIP
Browse...
InstallShield
< Back
Next >
Cancel

5. Installation continues.
   The following screen is displayed after successful completion.

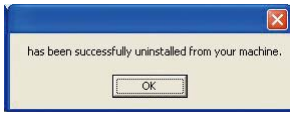

Information
Setup is complete. You may run the installed program by double-clicking on the program icon for the first registration.
OK

5.8 Uninstalling "JS RIP"

1. Select "JS RIP" from Add or Remove Programs on the Control Panel.


Add or Remove Programs
Change or Remove Programs
Add New Programs
Add/Remove Windows Components
Set Program Access and Defaults
Currently installed programs:
Show updates
Sort by: Name
Adobe Illustrator 10 Size 113.00MB
Adobe Reader 6.0.2 Size 44.83MB
Adobe SVG Viewer 3.0 Size 4.29MB
AVG 7.5 Size 23.20MB
GPU Size 0.88MB
JS RIP Size 20.40MB
Used rarely
Last Used On 8/24/2007
To change this program or remove it from your computer, click Change/Remove.
Change/Remove
Scanning Master Pro Color Size 5.38MB
SK / SP SERIES TWAIN32 DRIVER - SK200-09 Size 2.47MB
Windows Installer 3.1 (KB893803)
Windows Internet Explorer 7 Size 2.79MB

2. Perform uninstallation according to the instructions on the screen.
   The following screen is displayed after successful completion.



5.9 Start up "JS RIP"

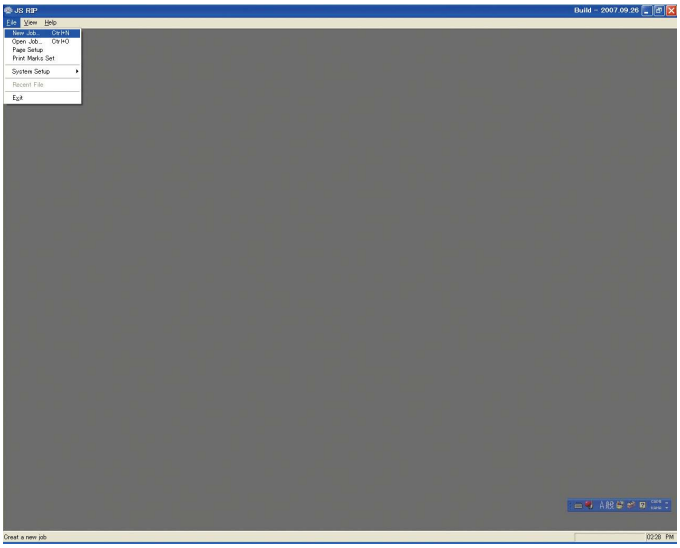
1. Double-click the icon on the desktop.
   Or start up from Start → All Programs → Graphtec → JS RIP.

5.10 Setting up models of JS RIP

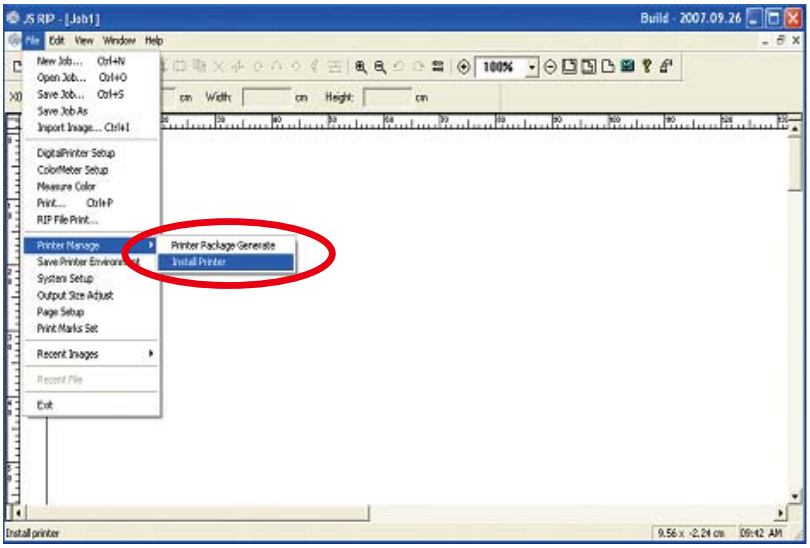
Start up JS RIP to add models.

1. Double-click the "JS RIP" icon on the desktop.
   Or start up from "Start → All Programs → Graphtec → JS RIP".

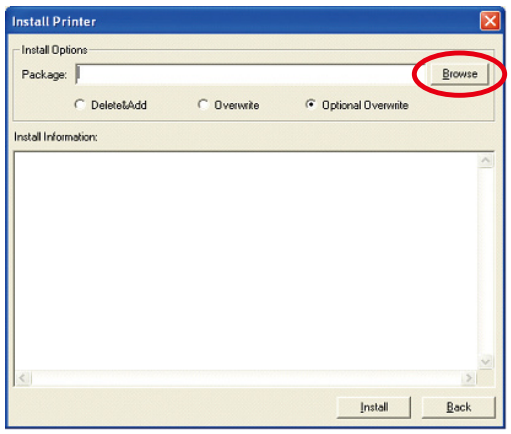
2. Select [New Job...] from the File menu, and open the [JS RIP-[Job1]] window.



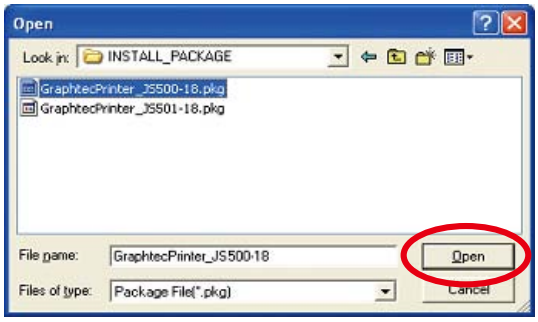
3. Click [Install Printer] of [Printer Manage] from the File menu to open the [Install Printer] window.



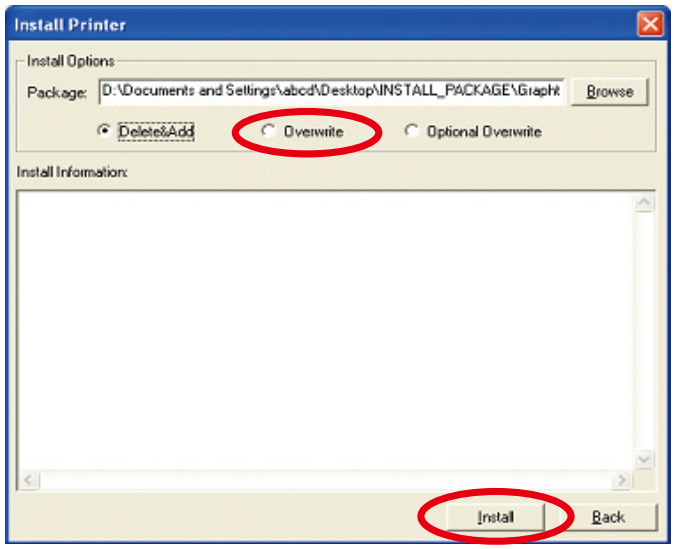
4. Click [Browse] to open the [Open] window.



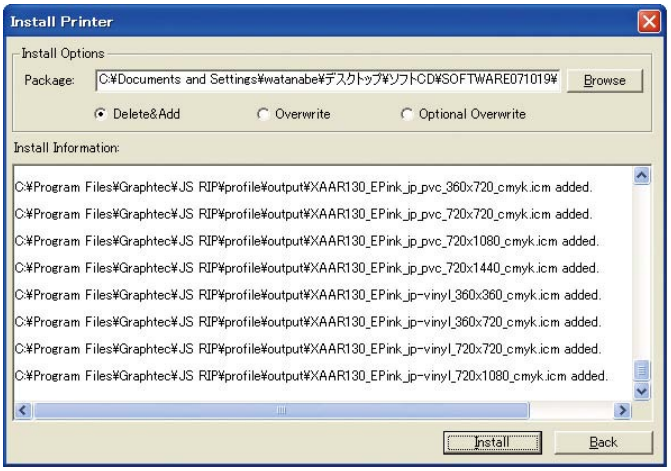
5. Select "INSTALL_PACKAGE" folder for Software CD-ROM from the [Lock in] list.
   Select either "GraphtecPrinter_JS500-18.pkg" or "GraphtecPrinter_JS501-18.pkg", and click [Open].



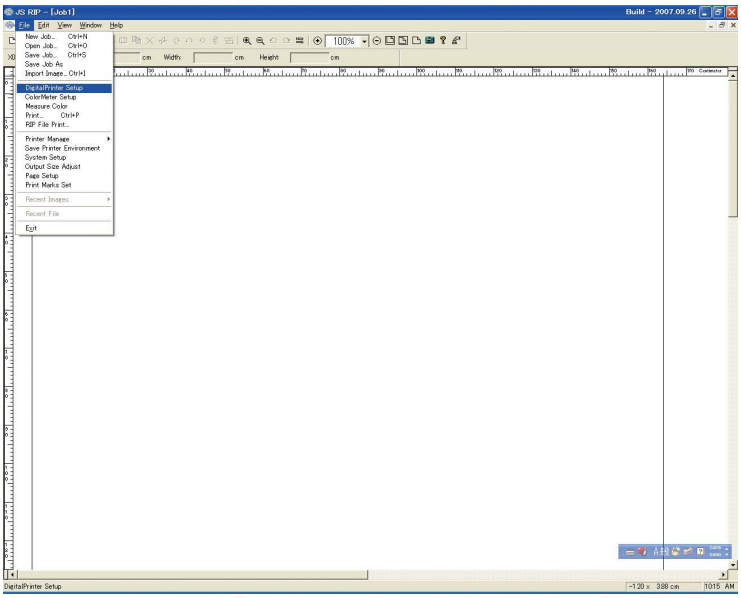
6. Select [Overwrite] and click [Install].
   - Delete&Add: Remove the installed model, and add a model.
   - Overwrite: Overwrite the installed model.
   - Optional Overwrite: Install models separately depending on resolution.



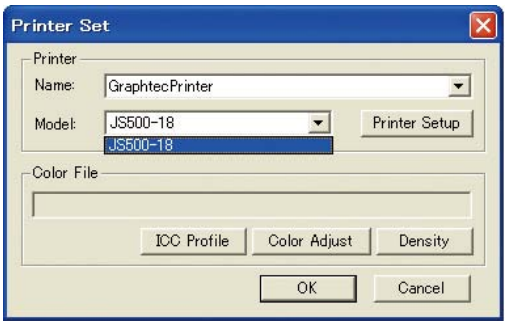
7. Several messages will move on the window as in the following screenshot. When the messages on the screen stop, it indicates that the installation has completed. Close the window.



8. Then, set up the installed model. Select [DigitalPrinter Setup] from the File menu, and open the [Printer Set] window.



9. Select the model you have just installed from the list of [Model], and click [OK].



This is the end of the installation process.

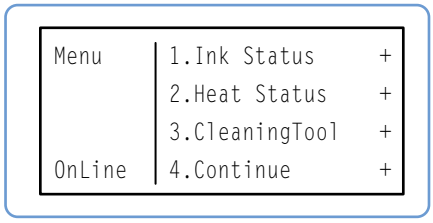
5.11 Printing from "JS RIP"

See the "RIP Manual" for details of the RIP functions.

1. Start up "JS RIP".
   Start up from Start → All Progress → Graphtec → JS RIP.
   Or double-click the icon on the desktop.
2. Open [New Job] and import the file (image) for printing.
   Or open a RIP File (***.pjf).
3. Select the Model from [Digital Printer Setup].
4. In [Printer Setup], set [Print Model], [Media], unilateral or bidirectional, [Color File], the Repeat quantity.
5. Press the Online button on the printer to make it online.
6. Press the [Print] button.
7. Printing starts.
   After printing is complete, the printheads stop at the Home Position in the standby mode.
   If no operation is performed for 1 hour after the printheads are moved to the Home Position, the Capping operation is automatically performed.

5.12 Aborting the printing from the printer

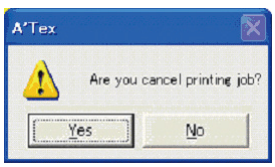
1. Press the ONLINE key for an extended period of time during the printing to abort the printing operation.
   The P/H Carriage moves to the Home Position and printing is aborted with the following LCD display.



2. Select "5.Cancel" by using the Up/Down keys to quit the printing.
3. The following is displayed on the JS RIP screen.
   Press [OK] to quit printing.

5.13 Canceling printing from "JS RIP"

1. Press the Esc key on the "JS RIP" screen during printing.
2. The following dialog is displayed.
   Press [Yes] to quit printing.
   Press [No] to resume printing.



Chapter 6 Cleaning system

6.1 Purpose of head cleaning

Leaving the printheads without performing printing for a while leads to fixed ink in the nozzles which may result in defective ejection or non-ejection of ink.

Printing with the nozzles which have defective ejection or non-ejection of ink deteriorates printing quality due to banding and other issues. Check the nozzles by the Jam Test before printing, and perform printhead cleaning if defective ejection or non-ejection of ink occurs often.

See "6.2 Jam Test", "6.3 Firing (empty ejection)" and "6.4 Printhead Cleaning" described later for details about the Jam Test and how to perform printhead cleaning.

6.2 Jam Test

6.2.1 Purpose of the Jam Test

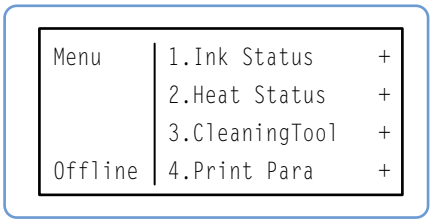
This test is used to check the condition of nozzles of the printheads. Check the results of the Jam Test printing if there are any nozzles which have defective ejection or non-ejection of ink.

If many defective ejections or non-ejections of ink are identified, perform printhead cleaning.

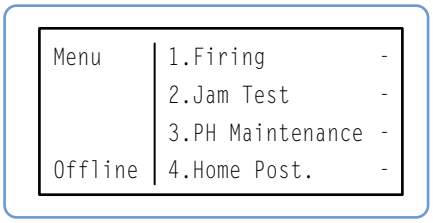
See "6.5 Cleaning during printing " and "6.6 Changing the Firing Volume (the amount of empty ejections)" described later for how to perform printhead cleaning.

6.2.2 How to perform the Jam Test

(1) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [2.Jam Test] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) The PH carriage moves to the printing starting position, and the Jam Test printing starts.
During operation, a "Busy" message is displayed on the LCD.

6.3 Firing (empty ejection)

6.3.1 Purpose of the Firing operation

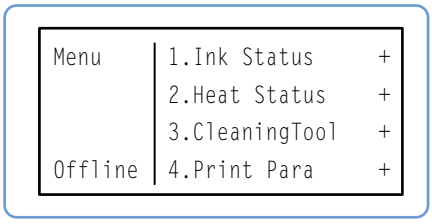
Perform the Firing (empty ejection) operation from the printheads forcedly to recover nozzles from defective ejections or non-ejection of ink.

This function is effective for recovering nozzles from a mild fixing of ink.

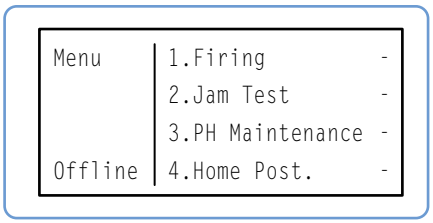
If nozzles are not recovered by performing the Firing (empty ejection) operation, perform printhead cleaning described later in "6.4 Printhead Cleaning".

6.3.2 How to perform the Firing

(1) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [1.Firing] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) During operation, a "Busy" message is displayed on the LCD, and empty ejections are performed.

6.3.3 How to set the Firing Volume (the amount of empty ejections)

See "6.6 Changing the Firing Volume (the amount of empty ejections)" to change the setting of the amount of empty ejections for one Firing.

6.4 Printhead Cleaning

When defective ejections or non-ejection of ink occur due to fixing of ink, this printer can recover nozzles from the condition by using three types of positive pressure cleaning operations that are described below.

* Usually, "Auto Cleaning" is recommended to perform positive pressure cleaning.

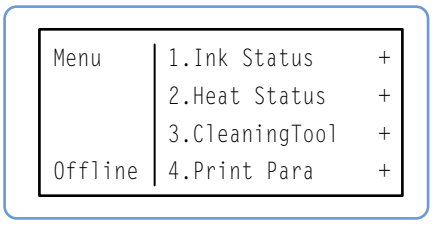
- Auto Cleaning
- Auto Cleaning (Heavy)
- Manual Cleaning

6.4.1 Auto Cleaning

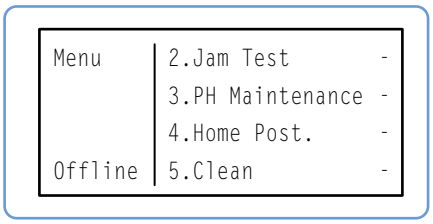
This function executes positive pressure cleaning forcedly from the ink pump to the printheads to recover nozzles from defective ejections or non-ejection of ink. This function is effective for recovering nozzles from fixing of ink.

Use the following steps to perform this function.

(1) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [5.Clean] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



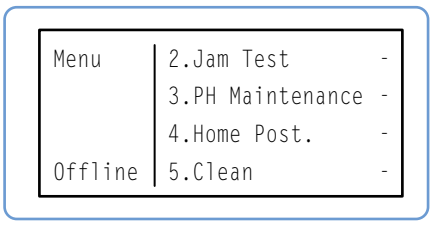
(3) A "Busy" message is displayed on the LCD, and automatic positive pressure cleaning is performed in the following sequences.

(1) The ink pump is operated automatically for several seconds to execute positive pressure cleaning forcedly on the printheads.

(2) After a waiting period of several seconds (the operations stop), an automatic roller cleaning operation wipes out the excessive ink on the surface of nozzles.

(3) Firing is executed, and the operation finishes.
See "6.6 Changing the Firing Volume (the amount of empty ejections)" described later to change the setting of the amount of empty ejections for the Firing.

(4) Performs a Jam Test to check the condition of nozzles.
=>Select [2.Jam Test] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



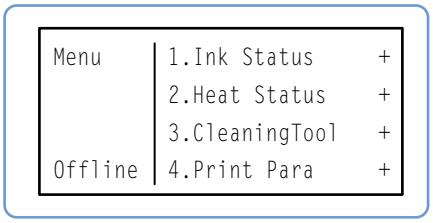
(5) If many defective ejections or non-ejection of ink are still identified, perform a positive pressure cleaning again.

6.4.2 Auto Cleaning (Heavy)

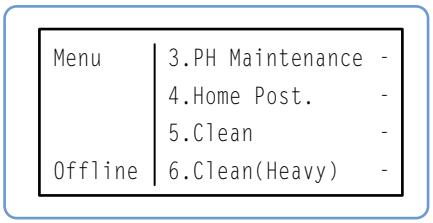
⚠ CAUTION ● This function consumes a huge amount of ink. Use it only when recovering nozzles after a robust fixing of ink.

This function executes positive pressure cleaning forcedly from the ink pump to the printheads. This function performs longer positive pressure cleaning operations than ordinary Auto Cleaning. Use the following steps to perform this function.

(1) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [6.Clean(Heavy)] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) A "Busy" message is displayed on the LCD, and automatic positive pressure cleaning is performed in the following sequences.

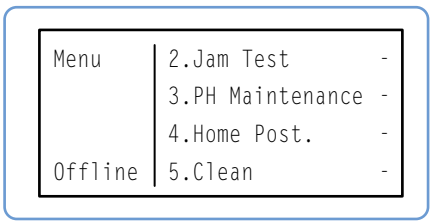
(1) The ink pump is operated automatically for several seconds to execute positive pressure cleaning forcedly on the printheads.

(2) After a waiting period of several seconds (the operations stop), an automatic roller cleaning operation wipes out the excessive ink on the surface of nozzles.

(3) Firing is executed, and the operation finishes.

See "6.6 Changing the Firing Volume (the amount of empty ejections)" described later to change the setting of the amount of empty ejections for the Firing.

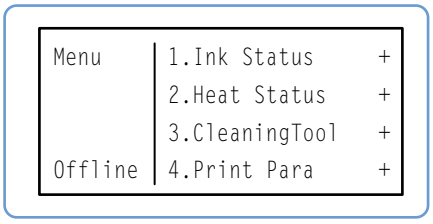
(4) Performs a Jam Test to check the condition of nozzles.
=> Select [2.Jam Test] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



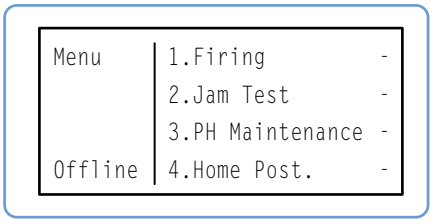
6.4.3 Manual Cleaning

To perform separate cleaning operations for each printhead, manual positive pressure cleaning can be performed after moving the desired PH carriage to the PH maintenance position. Use the following steps to perform this function.

(1) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



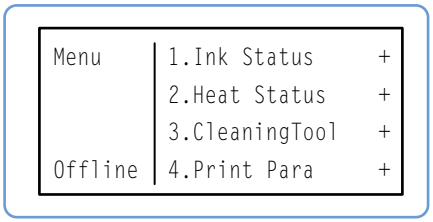
(2) Select [3.PH Maintenance] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



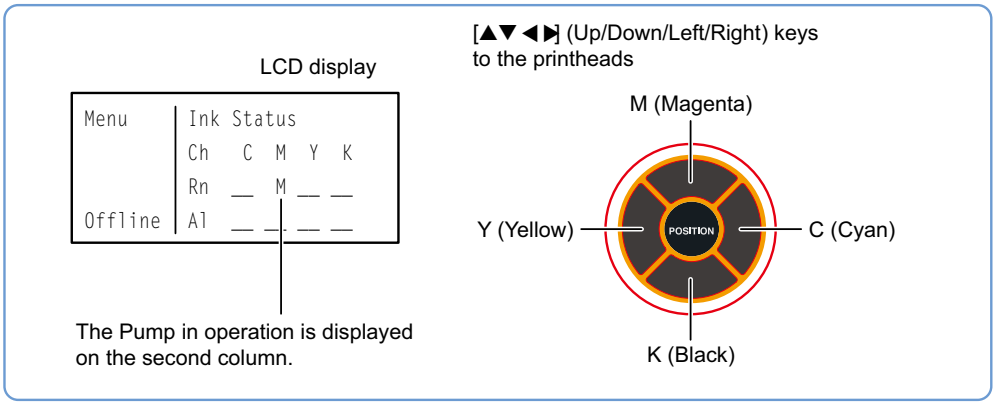
(3) During operation, a "Busy" message is displayed on the LCD, and the PH carriage moves to the PH maintenance position.

(4) Press the [ESC] key to return to the main menu.

(5) Select [1.Ink Status] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(6) Press the arrow key [▲▼◀▶] (Up/Down/Left/Right) which corresponds to the desired printhead to perform cleaning. The Ink Pump operates while the key is pressed, and positive pressure cleaning is performed. Hold down the key for around 5 - 10 seconds.

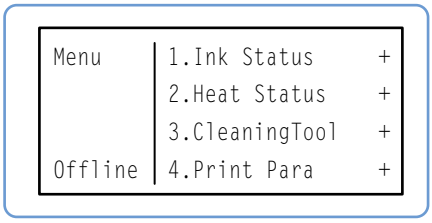


(7) After operation of the Ink Pump is complete, leave for around 30 - 40 seconds, and then wipe the excessive ink from the surface of nozzles by using the attached unwoven fabric or a brush.

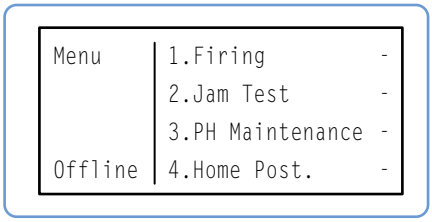
⚠ CAUTION ● **By leaving it for 30 - 40 seconds after the operation of the Ink Pump is complete, the raised pressure in the ink tube and the surge tank return to their normal status. Be sure to wipe out the excessive ink on the surface of nozzles by using the unwoven fabric after leaving it for 30 - 40 seconds.**

(8) Press the [ESC] key to return to the main menu.

(9) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

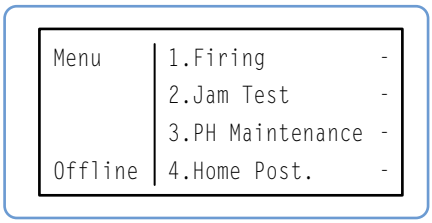


(10) Select [4.Home Post.] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(11) During operation, a "Busy" message is displayed on the LCD, and the PH carriage moves to the PH maintenance position.

(12) Performs the Jam Test to check the condition of nozzles.
=> Select [2.Jam Test] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(13) If many defective ejections or non-ejection of ink are still identified, perform manual cleaning again.

6.5 Cleaning during printing

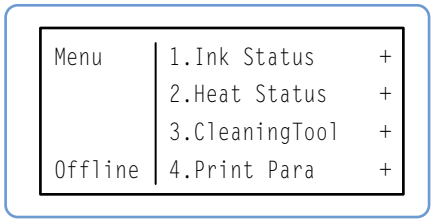
When any printhead has smaller frequency of ejections of ink, the ink in the nozzle is gradually fixed which may result in defective ejections or non-ejection of ink. Continuing printing in such a condition leads to deterioration of printing quality due to occurrences of banding.

Use the following steps to set the "Flash Mode" and the "Firing Volume".

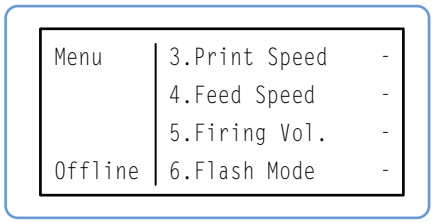
6.5.1 Flash Mode

Set the empty ejection mode which is performed during printing. To avoid the fixing of ink in the nozzles of the printheads which have a smaller frequency of ejections of ink, perform empty ejections (Firing) according to the set value for the printing passes. Set an appropriate value by checking the printing condition.

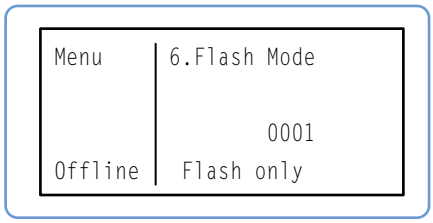
(1) Select [4.Print Para] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [6.Flash Mode] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

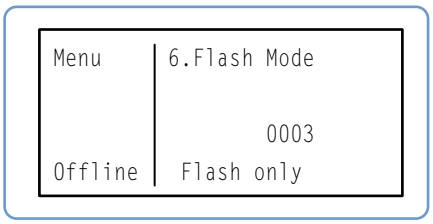


(3) To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys.

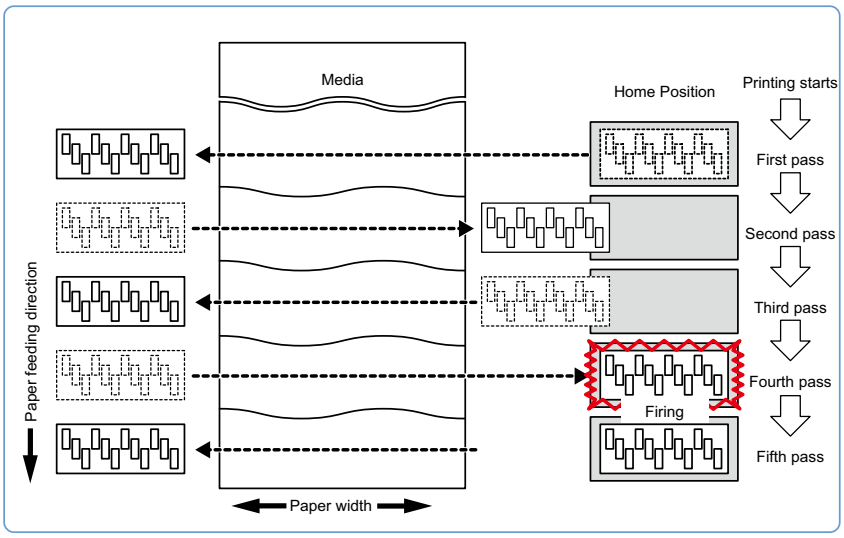


Setting range: 0000 - 0300 (Default value: 0001)
0001 - 0009 : Flash only
0010 - 0030 : Auto Clean

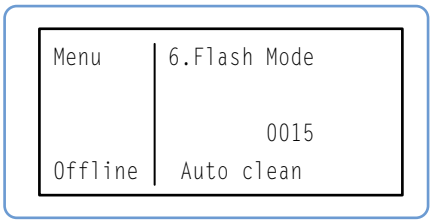
In the case that the set value is "0003"



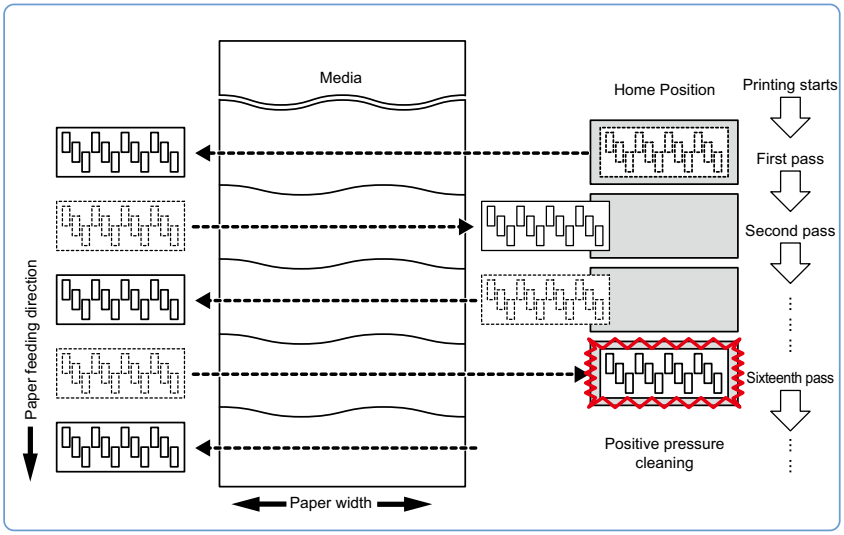
When the setting is "0000", empty ejections are not performed during printing. When the setting is 0001 - 0009, empty ejections are performed at the Home Position according to the set value for the number of passes. (Flash Only)



In the case that the set value is "0015"



When the setting is 0010 - 0300, Auto Cleaning is performed at the Home Position according to the set value for the number of passes.



(4) Press the [ENTER] key to store the set value.
Press the [ESC] key to cancel the set value. (In this case, the immediately preceding set value remains as the current set value)

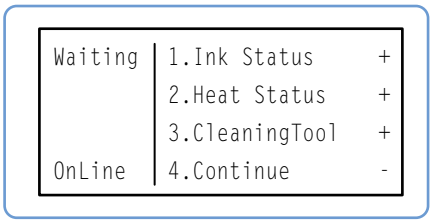
6.5.2 Cleaning by the Pause (pausing printing by manual operation) function

This printer can perform empty ejections (Firing) or positive pressure cleaning by pausing printing by pressing the [ONLINE] key. If the printing quality gradually deteriorates due to fixing of ink on the nozzles of the printheads, use the following steps to perform printhead cleaning by pausing printing.

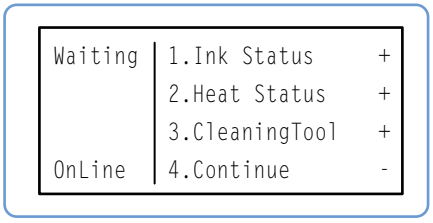
(1) Press the [ONLINE] key during printing.

(2) A "Busy" message is displayed on the LCD, and the PH carriage moves to the Home Position and stops.

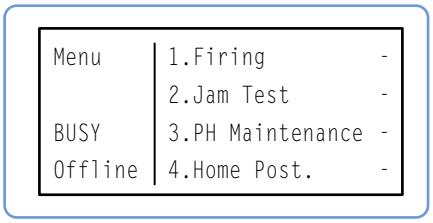
(3) The following LCD menu is displayed.



(4) Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

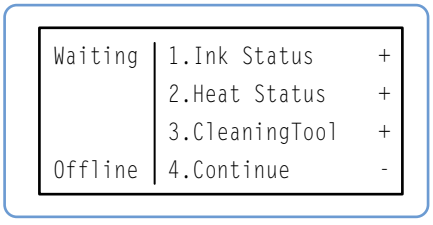


(5) Select the desired function from the Cleaning Tool submenu. A "Busy" message is displayed on the LCD, and the selected function (printhead cleaning) is performed.



* Functions other than the Jam Test are available (Jam Test does not work).

(6) After the "Busy" message on the LCD disappears and cleaning is complete, select [4.Continuous] by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

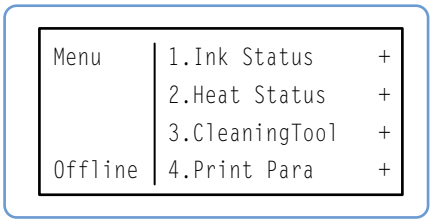


(7) The printer resumes printing.

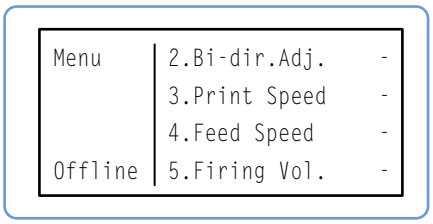
6.6 Changing the Firing Volume (the amount of empty ejections)

Set the amount of empty ejections for the above-mentioned "Firing" (empty ejection) function and the "Flash Mode" (the mode which performs empty ejections during printing). To change the setting, use the following steps.

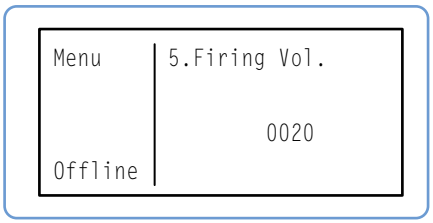
(1) Select [1.Print Para] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [5.Firing Vol.] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys.



Setting range: 0000 - 0200 (Default value: 0050)

(4) Press the [ENTER] key to store the set value.
Press the [ESC] key to cancel the set value. (In this case, the immediately preceding set value remains as the current set value)

* When the printhead carriage is in the standby mode at the Home Position, automatic firings are performed at a constant interval to prevent a fixing of ink on the printhead nozzles.

If the fixing of ink is significant during the standby mode, make an adjustment by increasing the set value of the Firing Volume (the amount of empty ejections).

6.7 Automatic Routine Cleaning

To maintain the appropriate condition of the printhead, this printer automatically performs cleaning actions when it is in the standby mode.

It is recommended to leave the power on when the printer is not used to activate this function.

Chapter 7 Setting the heater

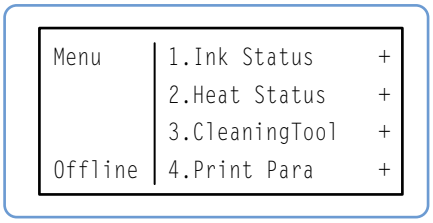
7.1 Outline

The heater warms up the media and the printheads to an appropriate temperature to maximize the printing quality.

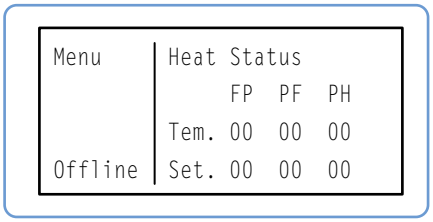
The current setting can be confirmed by displaying the Heat Status from the LCD Control Panel.

Set the value depending on the media and the usage environment.

(1) Select [2.Heat Status] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) The set temperature and the current temperature are displayed on the LCD.



7.2 Front Heater / Pre Heater

7.2.1 Explanation of functions

<Front Heater>

This heater is used to accelerate drying of ink after printing.

<Pre Heater>

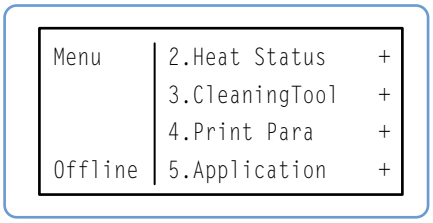
By warming up the media to an appropriate temperature during printing, fixing of ink and the color quality can be improved.

- The setting is automatically maintained at the set value.
- For safety, a protective circuit works, and the heater automatically stops at 60°C. After that, the heater automatically starts to operate after the temperature goes down.

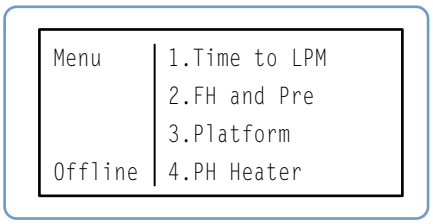
7.2.2 Setting method

Set the value from the LCD Control Panel.

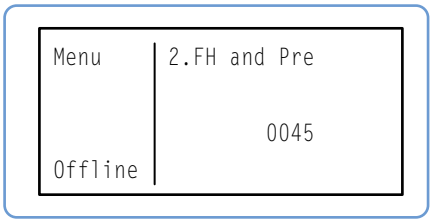
(1) Select [5. Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [2.FH and Pre] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value by using [▲▼] (up/down) keys.



Setting range: 0100 - 0099 (Default value: 0045)

(4) Press the [ENTER] key to store the set value.
Press the [ESC] key to cancel the set value. (The immediately preceding set value is enabled as the current set value).

- A rough indication of the setting depends on the types and thicknesses of media, however, it is approximately 40 - 50°C.
- Turn the power on to activate the heater.
- Turn the power off after printing.

  * Cockling may occur on the media if the set value is too high.

  * Feeding may be unstable because the media may stick on the roller if the set value is too high.

- A setting cannot be changed during printing.

⚠ CAUTION **● Cockling may occur depending on the type of media due to the set temperature. In such a case, lower the set temperature or raise the height of the printheads. (See "1.2 Parts Names and Functions")**

7.3 Plat form Heater

7.3.1 Explanation of functions

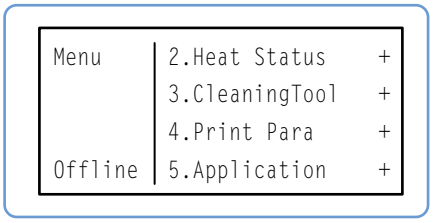
By applying an appropriate humidity to the media during printing, fixing of ink and the color quality can be improved.

- The setting is automatically maintained at the set value.
- For safety, a protective circuit works, and the heater automatically stops at 60°C. After that, the heater automatically starts to operate after the temperature goes down.

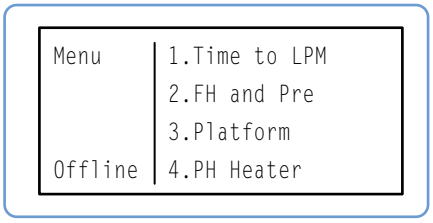
7.3.2 Setting method

Set the value from the LCD Control Panel.

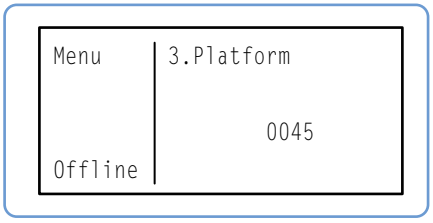
(1) Select [5. Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [3.Platform] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value by using [▲▼] (up/down) keys.



Setting range: 0000 - 0099 (Default value: 0045)

(4) Press the [ENTER] key to store the set value.
Press the [ESC] key to cancel the set value. (The immediately preceding set value is enabled as the current set value).

- A rough indication of the setting depends on the types and thicknesses of media, however, it is approximately 40 - 50°C.
- Turn the power on to activate the heater.
- Turn the power off after printing.
- A setting cannot be changed during printing.

⚠ CAUTION ● Cockling may occur depending on the type of media due to the set temperature. In such a case, lower the set temperature or raise the height of the printheads. (See "1.2 Parts Names and Functions")

7.4 P/H Heater

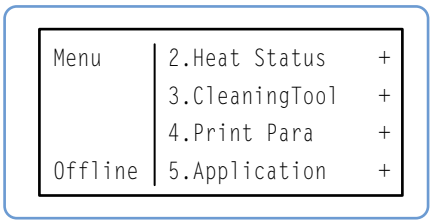
7.4.1 Explanation of functions

The P/H Heater maintains a constant temperature of the ink in the printheads to improve the stability of ejections of ink.

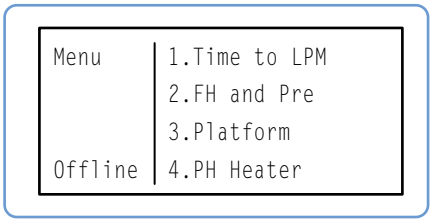
7.4.2 Setting method

Set the value from the LCD Control Panel.

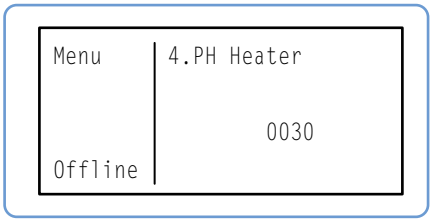
(1) Select [5. Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [4.PH Heater] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value by using [▲▼] (up/down) keys.



Setting range: 0000 - 0099 (Default value: 0030)

(4) [Press the [ENTER] key to store the set value.

Press the [ESC] key to cancel the set value. (The immediately preceding set value is enabled as the current set value).

The appropriate setting depends on the ambient temperature and types of ink, however, a setting of around 35°C is recommended.

If the temperature is too high, ink may drip off and wetness around the nozzles may deteriorate the printing condition.

If the temperature is too low, the supply of ink may become unstable.

7.5 Time to LPM (Low Power Mode)

7.5.1 Time to LPM

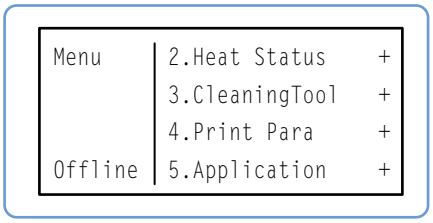
By setting the Time to LPM, the power of the PH Heater is turned on associated with the printing data during when the printer is online, and is warmed up to the set temperature. Printing starts when the temperature reaches the set value, and is controlled so the temperature is maintained during printing. After printing is complete and the Waiting status continues for the set time, it is automatically shifted to the Low Power Mode.

The printer automatically shifts to the following status when it enters the Low Power Mode.

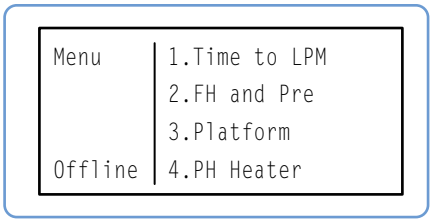
Front /Pre Heater = 30°C
PH Heater = 25°C
Media suction fan = Off

7.5.2 Setting method

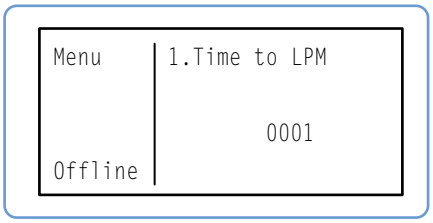
(1) Select [5. Application] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(2) Select [1.Time to LPM] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



(3) To change the value, move the cursor by using [◀▶] (left/right) keys, and change the value by using [▲▼] (up/down) keys.



Setting range: 0000 - 1999 (Default value: 0060): (Unit:min)

Setting the value to "0000", the Heater stays ON. (Time to LPM is disabled).

(4) [Press the [ENTER] key to store the set value.

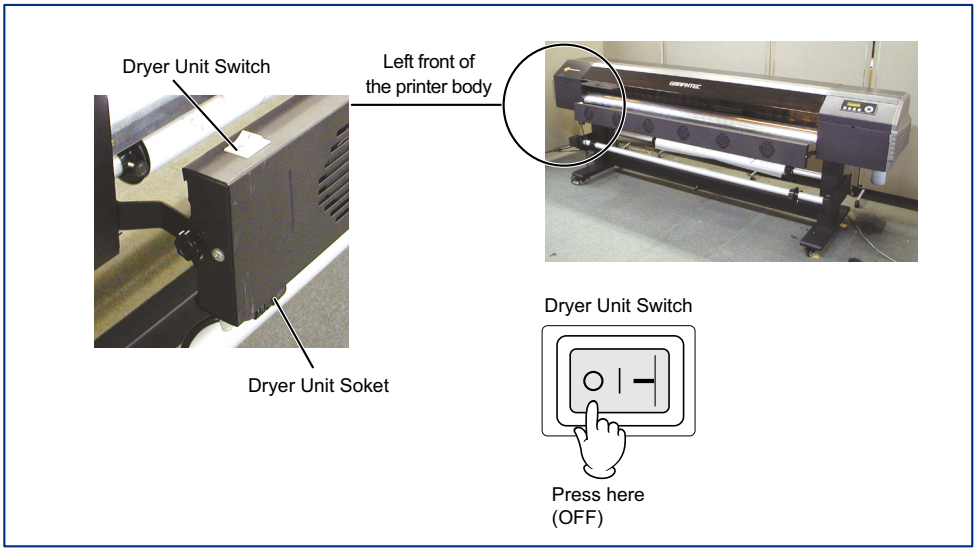
Press the [ESC] key to cancel the set value. (The immediately preceding set value is enabled as the current set value).

- The set temperature cannot be changed during printing.
- Only the PH Heater operates in conjunction with this mode. The Front Heater, Platform Heater and Pre Heater do not operate.

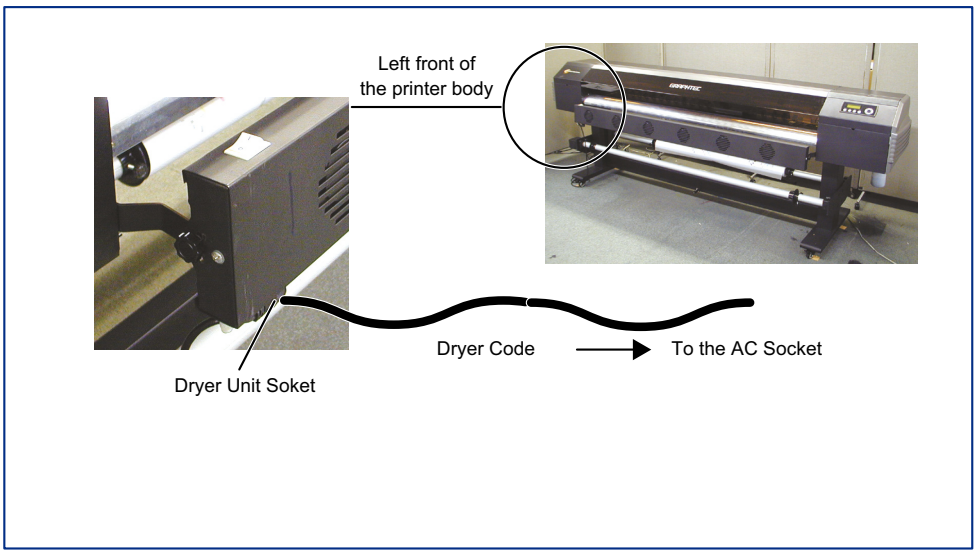
Chapter 8 Dryer Unit

8.1 Connecting the power supply

1. Check that all the Dryer Unit Switches are set to the "OFF" side (indicated by the "O" mark).



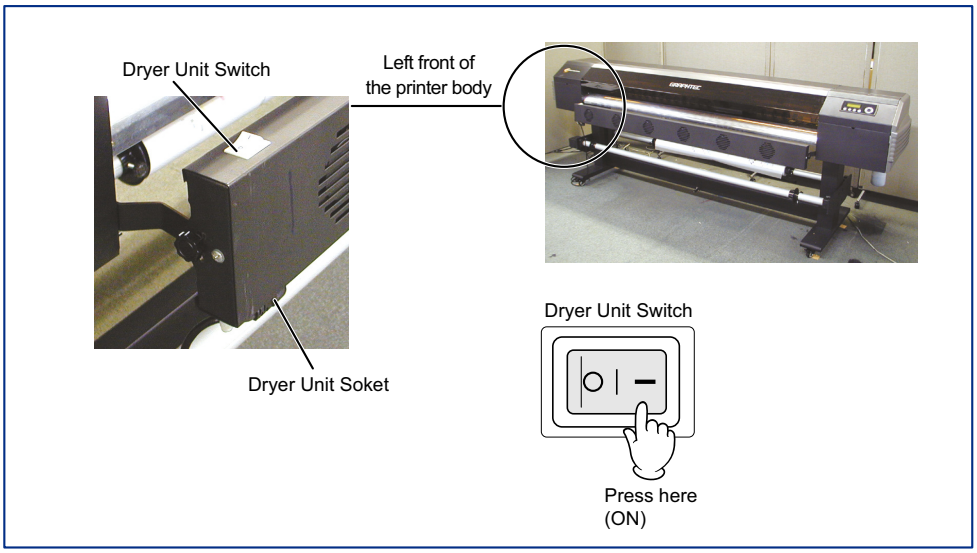
2. Connect one end of the attached power cable to the power socket for the dryer and the other end to an AC power outlet of the rated supply voltage.



8.2 Turning the power ON/OFF

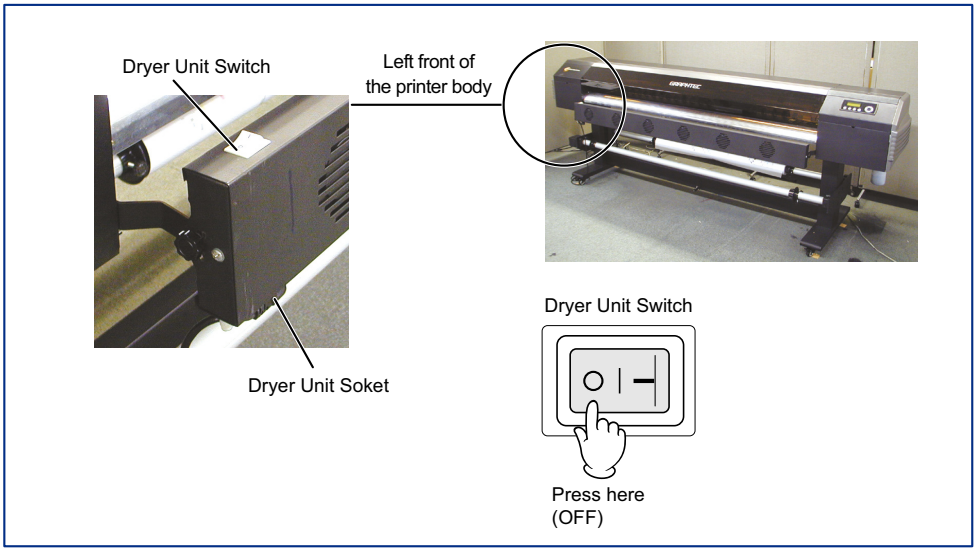
Turning the dryer unit On

Press the "ON" side (indicated by the "|" mark) of the Dryer Unit Switch. The dryer starts rotating.



Turning the dryer unit Off

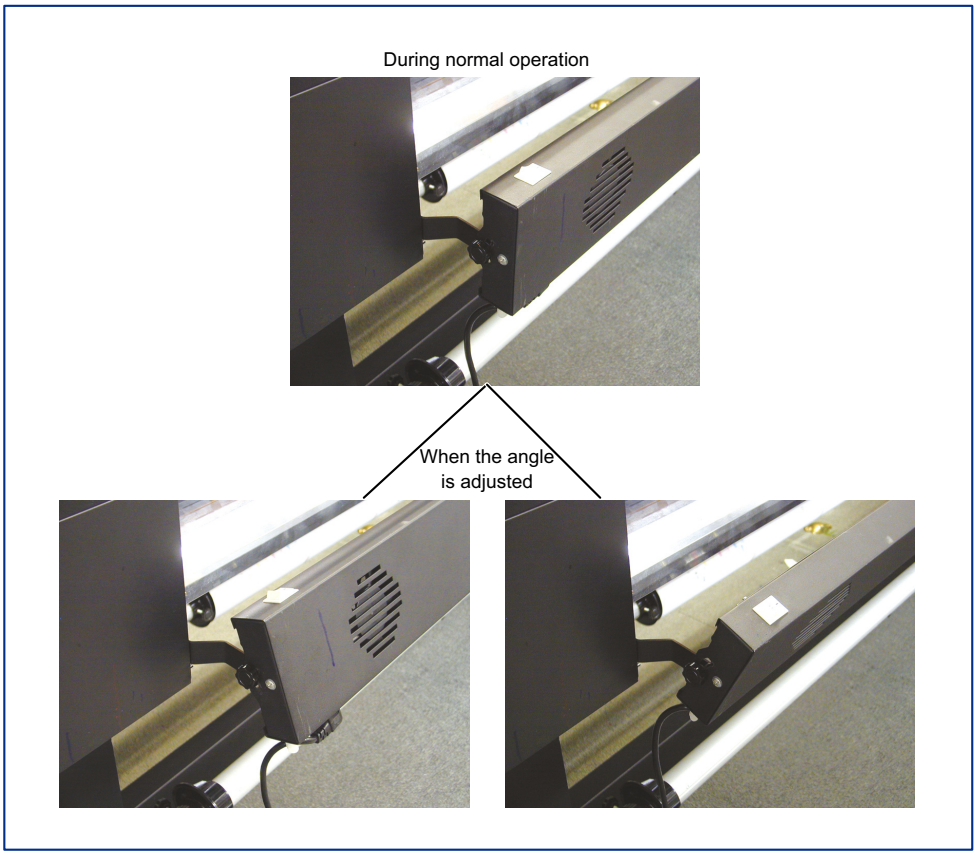
Press the "OFF" side (indicated by the "O" mark) of the Dryer Unit Switch. The dryer stops rotating.



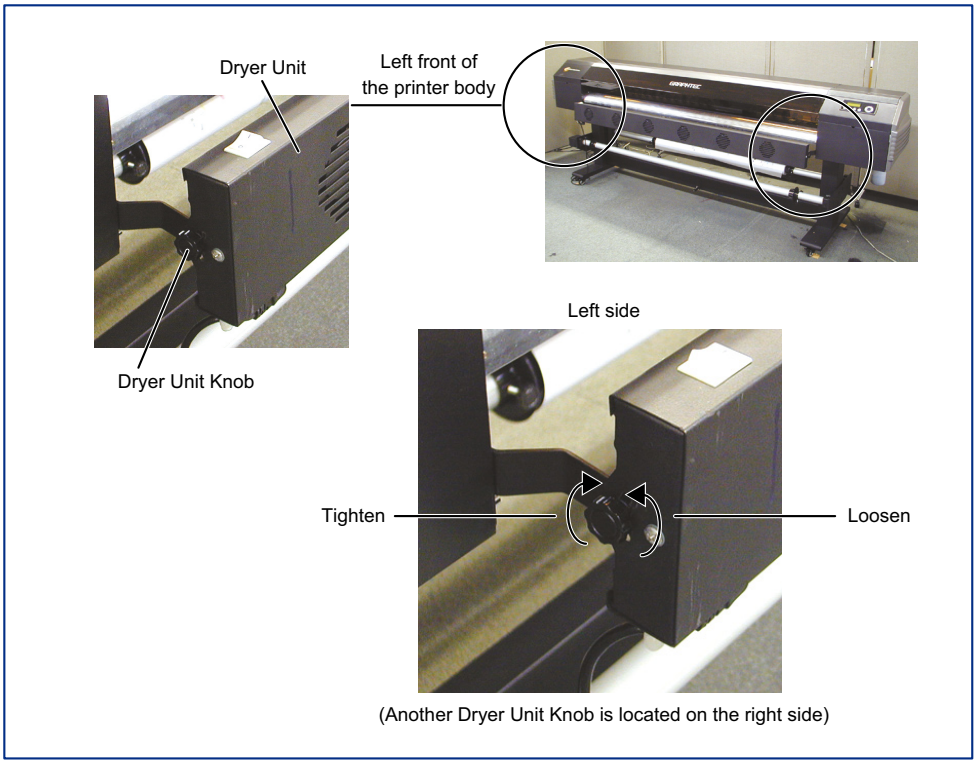
CHECKPOINT ● **The power supply of the Dryer Unit does not work in conjunction with printing operations. Turn the power of the Dryer Unit off when printing is not performed.**

8.3 Adjustment of the angle (direction of the wind) of the Dryer Unit

Adjust the angle (direction of the wind) of the dryer by loosening the right and left knobs.



After adjusting the angle (direction of the wind), tighten the left and right knobs.



Chapter 9 Maintenance

9.1 Replacing the Ink Cartridges

Ink End

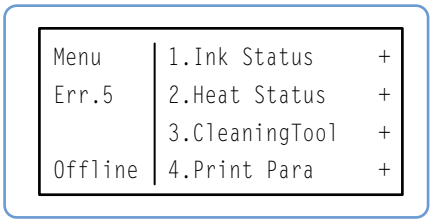
When the Ink End (ink in the ink cartridge is used up) occurs, the printer sends an alarm and an error message on the LCD (Err.5). Replace the indicated ink cartridge with a new one.

Err. 5: Ink End

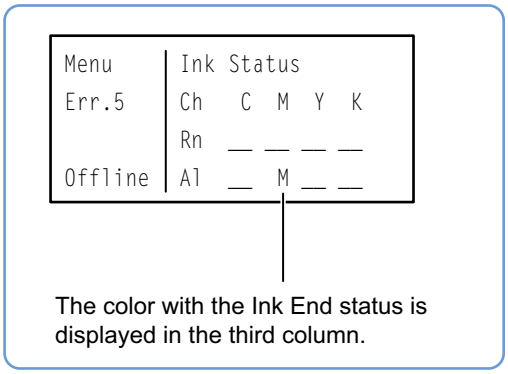
Replacing the ink cartridges

Use the following steps to replace the ink cartridge.

1. Select [1.Ink Status] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

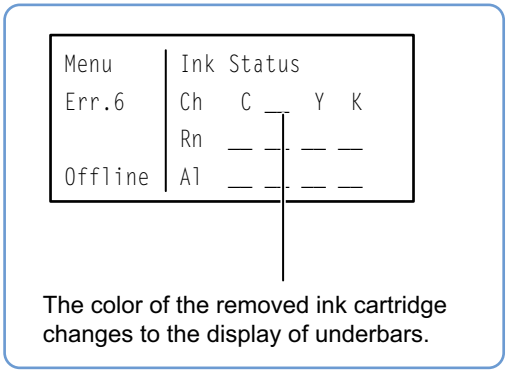


2. Check the ink cartridge with the Ink End status from the following LCD display.



3. Grab on the grip of the ink cartridge, and remove the ink cartridge from the ink holder.
   When the ink cartridge is removed, an error message (Err.6: No ink cartridge) is displayed on the LCD. (The alarm keeps on sounding)

   Err.6: No ink cartridge



⚠ CAUTION
- **Do not drop or shake the ink cartridges. Such actions may cause the ink to leak or splatter which may lead to staining of the immediate surroundings or on clothing.**
- **After removing ink cartridges, do not point the insertion port downward. Ink may leak from the insertion port.**

4. Set a new ink cartridge in the ink holder on the right side of the rear of the printer body. Insert it slowly along the insertion port of the ink holders.

   When the ink cartridge is set, the alarm stops sounding, and the error message on the LCD disappears.

⚠ CAUTION
- **Do not too frequently insert and remove ink cartridges to and from the printer body once it is set. Inserting and removing cartridges five or more times may result in leakage of the ink from the insertion port.**

9.2 Replacing the Cleaning Roller

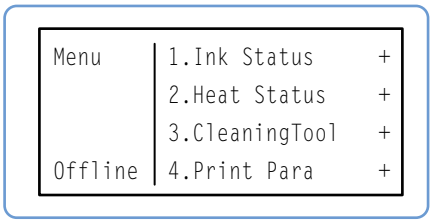
Replacement interval of the Cleaning Roller

Sediment of fixed ink and dirt are gradually attached to the Cleaning Roller after extended usage which may deteriorate the cleaning ability of the head. Therefore, it is recommended to replace the Cleaning Roller periodically (once every three months) with a new one.

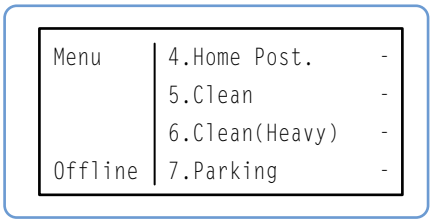
How to replace the Cleaning Roller

Use the following steps for replacement.

1. Move the Printhead Carriage to the Capping Position.
   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



   Select [7.Parking] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



2. The Printhead Carriage moves to the Capping Position and is capped.
3. Remove the Cleaning Roller Unit by moving it upward while pressing it toward the front side.
4. Remove the Cleaning Roller Shaft.
5. Moisten the new Cleaning Roller sufficiently with Ink Cleaning Solutions.
6. Insert the new Cleaning Roller into the shaft.
7. Install the Cleaning Roller Unit onto the printer.

Handling of the hardened Cleaning Roller

When the Cleaning Roller is unused for a while (for more than a week without turning on the printer), soaked-up ink may be fixed in the Cleaning Roller which may harden the roller. Using the Cleaning Roller again under such a condition may deteriorate the cleaning function of the head or damage the nozzle plate of the head. Be sure to moisten the Cleaning Roller sufficiently with Ink Cleaning Solution again before use, or replace with a new one if the cleaning function cannot be recovered by moistening it with Ink Cleaning Solution.

9.3 Waste ink bottles

There are two waste ink bottles, one on the left and the other on the right side of the printer. Periodically check, and when using the printer, visually check the amount of the waste ink in the waste ink bottles to avoid an overflow. If the waste ink bottles are full, use the following steps to dispose of the waste ink.

⚠ CAUTION
- **When removing the waste ink bottles, place paper on the floor to avoid stains by leaked ink.**
- **Waste ink tanks should be installed to operate this printer. Be sure to correctly and securely install the waste ink bottles.**
- **When the waste ink bottles become full, transfer the waste ink into an appropriate container to dispose of as industrial waste.**

1. Remove the full waste ink bottle carefully from the printer so as not to spill the waste ink. Turn the waste ink bottle counterclockwise to remove it from the printer body.
2. Transfer the waste fluid into an appropriate container to empty the waste ink bottle.
3. Install the empty waste ink bottle on the printer body. Turn the waste ink bottle clockwise to install it on the printer body.

9.4 Periodical maintenance

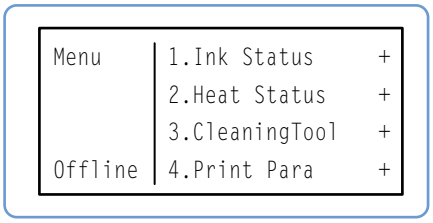
Daily maintenance

To maintain stable performance of the printer, perform the following everyday.

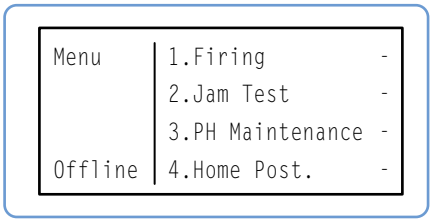
Moistening the sponge in the cap with Ink Cleaning Solution

The carriage is capped in the Capping Position when the printer is in the standby mode. To avoid drying of the printhead nozzles, the inside of the cap is required to be saturated with an appropriate amount of moisture from Ink Cleaning Solution. Use the following steps to pour Ink Cleaning Solution into the cap.

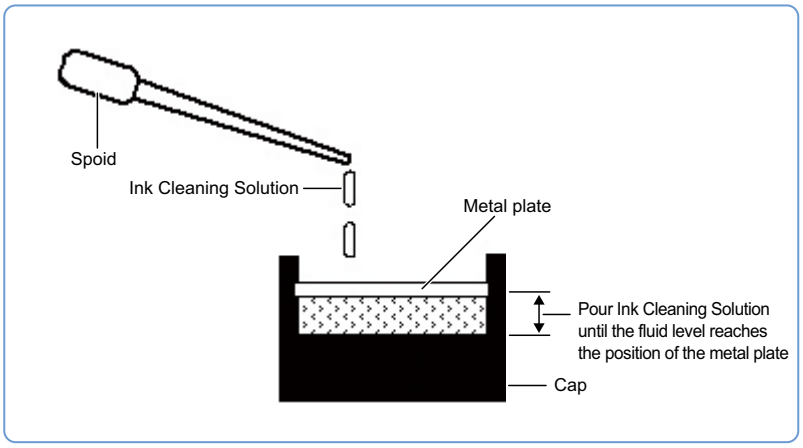
1. Move the Printhead Carriage to the PH Maintenance Position.
   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



   Select [3.PH Maintenance] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key



2. The Printhead Carriage is moved to the PH Maintenance Position.
3. Open the panel on the front lower right side. Opening the panel allows access to the Capping Unit.
4. Pour Ink Cleaning Solution into the cap.
   Keep on pouring it until the fluid level reaches the position of the metal plate in the cap.



5. Return the Printhead Carriage to the Capping Position.
   (Select [7.Parking] from the sub menu.)

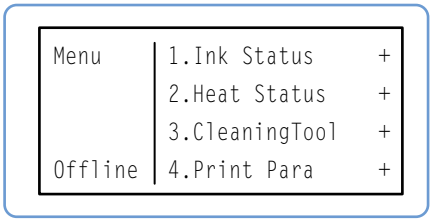
Checking the waste ink bottles

Check if the waste ink bottles are full. If they are full, transfer the waste fluid into an appropriate container to empty them.

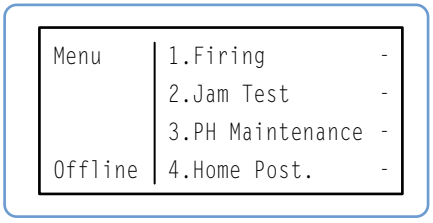
Check for interfusion of air (air bubbles) in the printhead tubes

After a long-term use, the gradual mixture of air into tubes may occur. If inlet tubes and outlet tubes connected to the printheads have been interfused with a significant amount of air, printing under such a condition may lead to a degradation of printing quality or troubles during printing. Check the inlet tubes and outlet tubes everyday before starting printing, and remove the air if interfusion is detected according to the following steps.

1. Move the Printhead Carriage to the PH Maintenance Position.
   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



   Select [3.PH Maintenance] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



2. Open the upper and lower panels on the front left side. Opening these panels allows access to the Printhead Carriage.
3. Remove the printhead cover.
4. Install the Ink Install Jig.
5. Close the outlet tube clamper of the printhead which has interfusion of air, and remove the outlet tube cap.
6. Connect the attached injector to the outlet tube, and open the outlet tube clamper.
7. When checking the interfusion of air in the tube, slowly remove the air bubbles with the injector.
8. Confirming that the air in the tube has been removed, close the outlet tube clamper, and remove the injector.
9. Install the outlet tube cap, and open the outlet tube clamper.
10. Remove the Ink Install Jig.
11. Perform Auto Cleaning. See "6.4.1 Auto Cleaning" described above for details.

⚠ CAUTION ● Be careful of the Printhead Carriage because it moves to the Home Position before performing the Auto Cleaning.

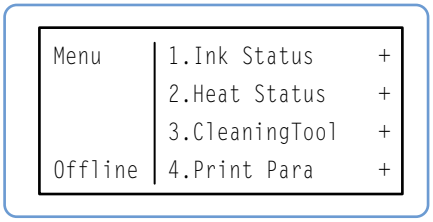
Weekly maintenance

To maintain stable performance of the printer, perform the following once a week.

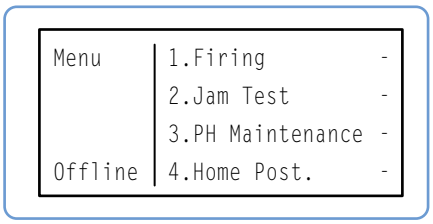
Cleaning of the capping unit

Use the following steps for cleaning of the capping unit.

1. Move the Printhead Carriage to the PH Maintenance Position.
   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



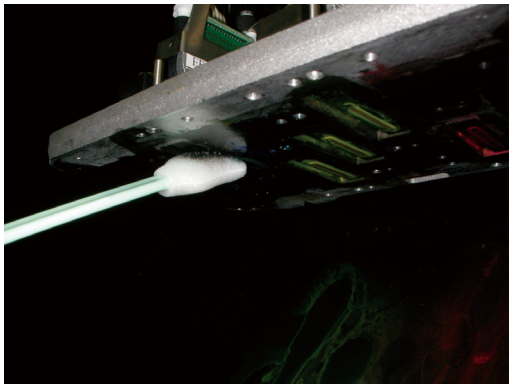
   Select [3.PH Maintenance] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



2. The Printhead Carriage is moved to the PH Maintenance Position.
3. Open the panel on the front lower right side. Opening the panel allows access to the Capping Unit.
4. Wipe around the edge of the upper side of the cap with the attached brush using Ink Cleaning Solution.

Then, clean the printhead nozzle plate and the lower side of the plate which fixes the printheads.

5. Open the upper and lower panels on the front left side. Opening these panels allows access to the Printhead Carriage.
6. Soak the Brush in Ink Cleaning Solution. Carefully wipe the nozzle plate of the printhead.



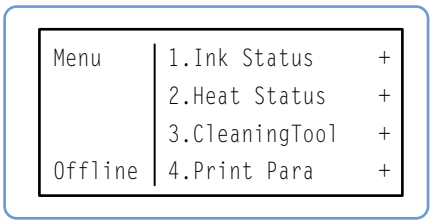
7. Carefully wipe the part which has contact with the cap on the lower side of the plate which fixes the printheads.

Move the Printhead Carriage to the Home Position or to the Capping Position after all the work is complete.

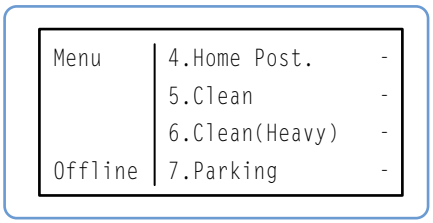
Clean the Cleaning Roller with Ink Cleaning Solution

Use the following steps for cleaning.
Be sure to apply ink cleaning solution to the entire roller once every three days.

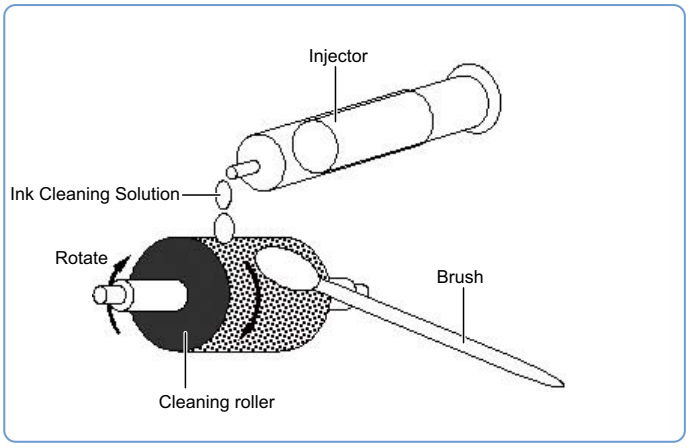
1. Move the Printhead Carriage to the Capping Position.
   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



   Select [7.Parking] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



2. The Printhead Carriage moves to the Capping Position and is capped.
3. Open the panel on the front lower right side. Opening these panels allows access to the Cleaning Roller.
4. Rotate the Cleaning Roller by using the attached brush to apply Ink Cleaning Solution to the entire roller.



9.5 Handling of the printer when it will not be used for a while

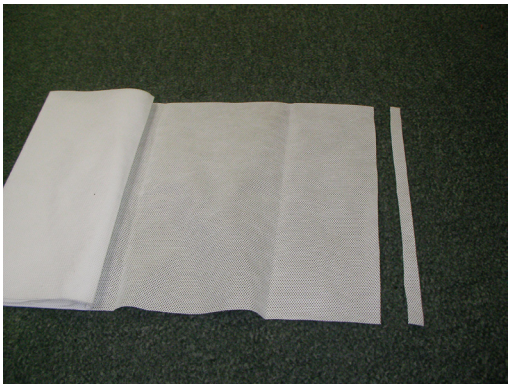
If the printer will not be used for a while (two weeks or longer), clean the printheads and the tubes between the printheads and the ink cartridges, and fill them with Ink Cleaning Solution before storage.

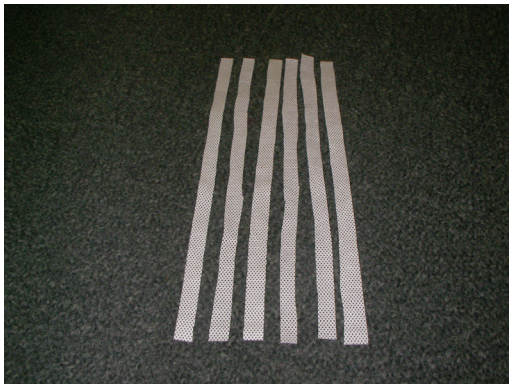
Removal of ink

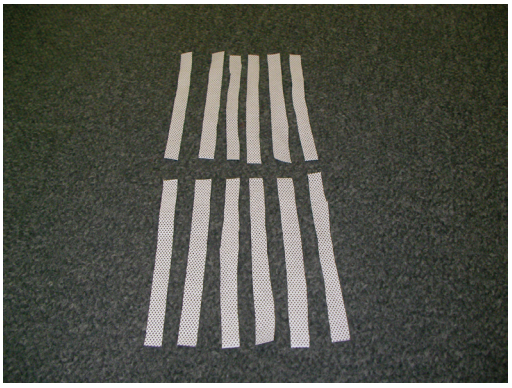
Refer to the attached "Setup Guide", and remove all the ink from the tubes which connect the ink cartridges and the printheads.

Cleaning with Ink Cleaning Solution and fill the tubes with Ink Cleaning Solution

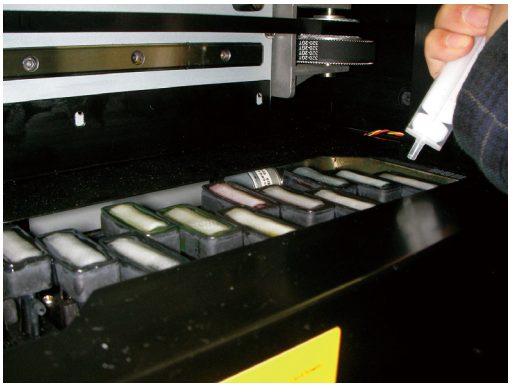
1. Refer to the attached "Setup Guide", and fill the tubes which connect the ink cartridges and the printheads with Ink Cleaning Solution.
2. Leave for 10 - 20 minutes, repeat the above Step 1.
3. Cut the unwoven fabric into long and slenderly pieces.







4. Fold unwoven fabric for 1/4 size, and then put it on the cap.
   Fill in the cap with Ink Cleaning Solution.



5. Check that the Ink Install Jig is not attached, move the Printhead Carriage to the Capping Station and cap it.
6. Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

Menu	1.Ink Status	+
	2.Heat Status	+
	3.CleaningTool	+
Offline	4.Print Para	+

Select [7.Parking] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.

Menu	4.Home Post.	-
	5.Clean	-
	6.Clean(Heavy)	-
Offline	7.Parking	-

7. Turn off the power.

⚠ CAUTION ● **After long-term storage, the mixture of air into the outlet tubes and inlet tubes may occur due to gradual volatilization of the Ink Cleaning Solution in the printheads. Be sure to check the outlet tubes and inlet tubes at least once a week. If a significant amount of air is found, set the Ink Install Jig, and remove air with an injector.**

9.6 Handling of the printer which has been turned off for a while

Before using a printer which has been turned off for a while (two weeks or longer), use the following steps to refill the ink.

Moistening the Cleaning Roller with Ink Cleaning Solution

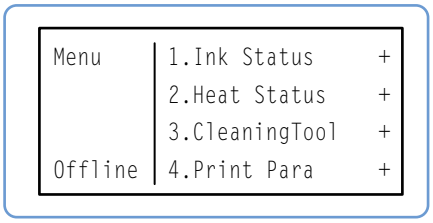
If the Cleaning Roller is significantly hardened, it is recommended to replace it with a new one.

See "9.2 Replacing the Cleaning Roller" described above for details.

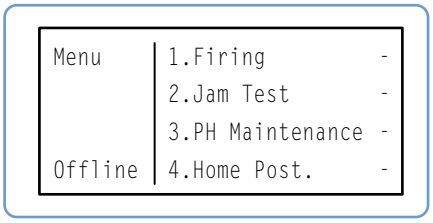
Removal of Ink Cleaning Solution

1. Remove all the Ink Cleaning Solution cartridges from the printer, and turn on the power.
2. Move the Printhead Carriage to the PH Maintenance Position.

   Select [3.Cleaning Tool] from the main menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



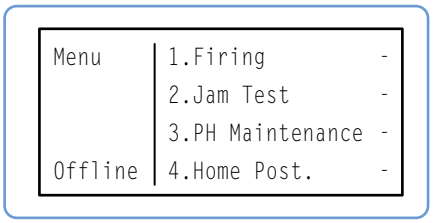
   Select [3.PH Maintenance] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



3. Referring to the attached "Setup Guide", remove all the Ink Cleaning Solution from the tubes which connect the ink cartridges and the printheads.

Filling ink

1. Referring to the attached "Setup Guide", fill the tubes which connect the ink cartridges and the printheads with ink.
2. Performs the Jam Test to check the condition of the nozzles.
   Select [2.Jam Test] from the sub menu by using [▲▼] (Up/Down) keys, and press the [ENTER] key.



   If the condition identified by the Jam Test is not appropriate, perform the head cleaning again.

Chapter 10 What to Do if This Happens

10.1 When an Error Message is Displayed

Explanation of error messages

1. Warning:

Wrn2 Pinch roller is not downed

Wrn19 Heating not complete

Wrn20 Will time out

2. Error:

When one of the errors listed below occurs during printer will run normally but give alarm for warning

Err5 Ink end

Err6 No ink cartridge

Err7 No paper

Err8 Motor servo error

Errors listed below indicate the detail for further check when self test fails

Errors listed below indicate the detail for further check when self test fails

Err9 Y raster direction of counter is different from motor

Err10 Y raster not connect

Err11 Se error between command and action is large

Err12 Se anti-counter is not correct

Err13 Main board internal error

Err14 Ink supply board(aux) version error

Err15 Config Rom error

Err16 Original Position Sensor not connect

Err21 Time out

Err22 Ink supply board(rtc) error

Err23 Ink supply board(aux) error

Err24 Key not match

10.2 Troubleshooting

The Printer Does Not Operate Correctly

Symptom	Cause	Solution
Cannot turn on the power.	The power cable is not connected.	Securely connect the power cable.
	The power outlet is not connected to an appropriate power source.	Connect the power plug to an appropriate power source.
Cannot start printing	The printer is not turned on.	Turn on the printer.
	The USB cable is not connected.	Correctly connect the USB cable between the printer and a PC.
	Setting of the printer has not been performed.	Correctly set the Printer Name and Model.
	The printer is in the offline mode.	Switch the printer to the online mode.
	Print job is paused.	Continue the print job.
	An error message is displayed.	Take the appropriate measure depending on the error message.
The heater is turned on, but the temperature does not move up.	The heater is in the Low Power Mode.	Start printing.
	The set temperature for the heater is too low.	Raise the set temperature of the heater.
Paper cannot be fed straight.	Paper is not set straight.	Set the paper straight.

When Printing is not Satisfactory

Symptom	Cause	Solution
Printing quality is poor.	Paper type	Change or confirm the setting of the set temperature of the heater, print mode or RIP to improve the quality. If no improvement can be achieved, ink and paper type may not match. Change the paper type.
	Ink type	Use the ink specified by GRAPHTEC.
Printing is faint and is not uniform.	Nozzles of the printheads are clogged up.	Perform cleaning. If cleaning does not solve the problem, wipe off the ink on the printheads. (See "9.4 Periodical maintenance" in this manual.)
	Tubes have air inside.	Remove the air in the tube. (See "9.4 Periodical maintenance" in this manual.)
	No ink in ink cartridges.	Replace the ink cartridge with a new one. (See "9 Maintenance" in this manual.)
	Printheads reach their duration of life.	Contact the distributor.
	The maintenance station is dirty.	Clean the head cap. Clean the cleaning roller or replace it with a new one. (See "9.4 Periodical maintenance" in this manual.)
	EF value is not appropriate.	Set an appropriate EF value. (See the "Setup Guide".)
	Setting of the Printhead Heater is not appropriate.	Set the Printhead Heater appropriately. (See the "Setup Guide".)
	Setting of the Firing Volume/Flash Mode is not appropriate.	Set the Firing Volume/Flash Mode appropriately. (See "4.4 Functions of each menu" in this manual.)
	Color Bar is not installed.	Set the color bar. (See the "RIP Manual".)
Ink is running.	Paper has wrinkles.	Set the paper appropriately. Or feed the paper, and cut out the wrinkled part.
	The set temperature for the heater is not appropriate.	Lower the set temperature.
	The power of the suction fan is not sufficiently strong.	Change the setting of the paper suction fan.
	Printing is too dark.	Lighten the printing.
	Printheads touch on the paper.	Increase the head gap. (See "1.2 Parts Names and Functions" in this manual.)

Symptom	Cause	Solution
Ink is not ejected.	Tubes have air inside.	Remove the air in the tubes. (See the "Setup Manual".)
	No ink in ink cartridges.	Replace the ink cartridge with a new one. (See "9.1 Replacing the Ink Cartridge" in this manual.)
	Nozzles of the printheads are clogged up.	Perform cleaning. If cleaning does not solve the problem, wipe off the ink on the printheads. (See "6.4 Printhead Cleaning" in this manual.)
	Setting of the GPU is not appropriate.	(See "5 Software" in this manual.)
	EF value is not appropriate.	Set an appropriate EF value. (See the "Setup Manual".)
	Flexible printed circuits of the printheads are connected.	(See the "Setup Manual".)
Printing has blurred.	Setting of the temperature of the heater is not appropriate.	(See "7 Setting the heater" in this manual.)
	Paper type is not appropriate.	Use the dedicated paper for solvent inkjet printers.
	The front side and the back side of paper are faced to the wrong side of the printer.	Check the setting of the paper.
	Printing density does not match the paper type.	Lighten the printing.
The edge of the paper becomes dirty.	The edge guard is not appropriately set.	(See "Setting a roll paper" in this manual.)
	Paper is wrinkled or curled.	Set the paper after removing wrinkles and curls.
	The platen is dirty.	Clean the platen.
Color tone of printing is different from the original.	No ink in ink cartridges.	Replace the ink cartridge with a new one. (See "9.1 Replacing the Ink Cartridge" in this manual.)
	Nozzles of the printheads are clogged up.	Perform cleaning. If cleaning does not solve the problem, wipe off the ink on the printheads. (See "6.4 Printhead Cleaning" in this manual.)
	EF value is not appropriate.	Set an appropriate EF value. (See the "Setup Manual".)
	Flexible printed circuits of the printheads are connected.	(See the "Setup Manual".)

If the Paper Becomes Jammed

Turn the power off, remove the jammed paper, and check if there is no obstacle where the carriage and the paper go through.

Set the paper, and turn on the power again.

Occurrence of an abnormal sound

If you feel that the sound of the printer is different from that of a normal operation, contact the distributor.

Chapter 11 Specifications, optional items and consumable items

11.1 Standard Specifications

Item			Specification	
Model			8head model	12head model
Printing system			Piezo	
Print heads			Xaar 126 300 dpi	
Ink			Eco Solvent, Solvent (4 colors (BK,C,M,Y))	
Ink supply system			Auto ink supply by electric pump	
Number of print head nozzles			126 nozzles per each	
External dimensions (Including the stand)		(W x D x H) (approx.)	3076 x 664 x 1110 mm	
Weight (Including the stand)		(approx.)	330 kg	
Printing resolution (dpi)	Color	High quality	720 x 1440 dpi 720 x 1080 dpi 720 x 720 dpi	
		Standard	360 x 720 dpi	
		High-speed	360 x 360 dpi	
Printing speed	Color	High quality	6 m^2/h (720 x 720 dpi)	9 m^2/h (720 x 720 dpi)
		Standard	12 m^2/h (360 x 720 dpi)	18 m^2/h (360 x 720 dpi)
		High-speed	24 m^2/h (360 x 360 dpi)	36 m^2/h (360 x 360 dpi)
Paper source			Roll feed, manual feeding of cut sheets	
Media size	Roll paper	Maximum width	1823 mm (72 inch)	
		Minimum width	210 mm	
	Cut sheets	Maximum width	1823 mm (72 inch)	
		Minimum width	210 mm	
Printing size	Roll paper	Maximum width	1823 mm (72 inch)	
		Minimum width	210 mm	
	Cut sheets	Maximum width	1823 mm (72 inch)	
		Minimum width	210 mm	
Media type			Flex, Vinyl, Windows Film, Polyester, etc.	
Interfaces			USB 2.0 (High Speed)	
Display panel			LCD display with 8 key panel, Self-diagnosis available	
Language			English	
Power consumption			Maximum: 2.7 kW	
Noise level		During operation	Approx. 70 dB or less	
		Standby status	Approx. 40 dB or less	
Rated power supply			AC 200-240 V ±10%, 50/60 Hz	
Operational environments	Operation guaranteed		20 to 28°C, 40% to 70%RH (non-condensing) 20 to 26°C: When using the REV (Reverse) turning function of the Take-up system	
	Non-operation		5 to 35°C, 10% to 80%RH (non-condensing)	
Safety standards			CE Mark and UL	
Electromagnetic standards			FCC (Class A)	
Other standards			RoHS	

11.2 Optional items

No.	Item name	Model name	Remarks
1	12heads upgrade kit	OPH-A07	A kit for upgrading the 8-head model to the 12-head model.

11.3 Consumable items

No.	Item name	Model name	Remarks
1	Printhead	IH-81000	Printheads for replacement
2	Ink cartrige BLACK	IJ-81000BK	Ink cartridge for the JS500 series (Volume: 500 ml per color)
3	Ink cartrige CYAN	IJ-81000C	
4	Ink cartrige MAGENTA	IJ-81000M	
5	Ink cartrige YELLOW	IJ-81000Y	
6	Solution cartrige	IJ-81000S	Solution cartridge for the JS500 series
7	Ink cartrige BLACK (Eco Solvent Ink)	IJ-81050BK	Ecological solvent cartridge for the JS500 series (Volume: 500 ml)
8	Ink cartrige CYAN (Eco Solvent Ink)	IJ-81050C	
9	Ink cartrige MAGENTA (Eco Solvent Ink)	IJ-81050M	
10	Ink cartrige YELLOW (Eco Solvent Ink)	IJ-81050Y	
11	Solution cartrige (Eco Solvent Ink)	IJ-81050S	Ecological solvent cartridge for the JS500 series (Volume: 500 ml)
12	Cleaning roller	MK-00005	Cleaning roller for replacement
13	Solution bottle	MK-00006	Solution bottle for the JS500 series (Volume: 250 ml)

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● The contents of this manual are subject to change without notice.

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